USDA United States Department of Agriculture

Natural Resources Conservation Service

Washington Basin Outlook Report January 1, 2002

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Washington
Water Supply Outlook

January 2002

General Outlook

Fall precipitation started off with a bang in the state of Washington. October, November and December all received greater than average precipitation. However above average temperatures also delayed normal snowpack accumulation by two-four weeks. West-side precipitation helped refill reservoir levels, however Eastern Washington didn't see the same kind of recharge through precipitation events. The effects of last summer's drought may be reduced but we are still a long way from being completely out of danger. Considerable precipitation over the next several months will be required to mitigate current soil moisture, ground water and streamflow deficits.

Snowpack

The January 1 statewide SNOTEL readings were above average at 122%. The Pend Oreille River Basin snow surveys (including Canadian data) reported the lowest readings at 81% of average. Readings in the Nooksack River Basin reported the highest at 164% of average. Westside averages from SNOTEL, and January 1 snow surveys, included the North Puget Sound river basins with 134% of average, the Central Puget river basins with 143%, and the Lewis-Cowlitz basins with 133% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 121% and the Wenatchee area with 109%. Snowpack in the Spokane River Basin was at 117% and the Walla Walla River Basin had 129% of average. Maximum snow cover in Washington was at Brown Top snow course in the North Cascade Mountains, with water content of 36.8 inches. This site would normally have 27.3 inches of water content on January 1. Last year at this time Brown Top had only 10.4 inches of snow water. The highest average in the state was Spirit Lake SNOTEL near Mt. Saint Helens with 297% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	185	117
Newman Lake	231	147
Pend Oreille	133	81
Okanogan	157	99
Methow	207	97
Similkameen	117	67
Wenatchee	157	105
Chelan	229	112
Upper Yakima	163	108
Lower Yakima	231	119
Ahtanum Creek	198	136
Walla Walla	180	129
Lower Snake	161	108
Cowlitz	208	117
Lewis	196	148
White	266	115
Green	214	110
Puyallup	269	115
Cedar	158	136
Snoqualmie	202	129
Skykomish	189	126
Skagit	224	107
Baker	434	132
Nooksack	261	164
Olympic Peninsula	184	160

Precipitation

During the month of December, the National Weather Service and Natural Resources Conservation Service climate stations reported varying precipitation totals throughout Washington river basins. The highest percent of average in the state was at Republic, Washington. Republic reported 189% of average for a total of 3.83 inches. The average for this site is 2.03 inches for December. The greatest monthly increase in the state was reported at June Lake SNOTEL with a December accumulation of 33.1 inches, just slightly above average for the site. Basin averages for the water year are mostly above average with the Olympics reporting the highest at 156% and the Upper Yakima with the lowest at 96% of average.

RIVER BASIN	DECEMBER PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	102	115
Colville-Pend Oreille	134	124
Okanogan-Methow	127	121
Wenatchee-Chelan	109	112
Upper Yakima	98	96
Lower Yakima	112	117
Walla Walla	103	115
Lower Snake	111	115
Cowlitz-Lewis	118	114
White-Green-Puyallup	106	108
Central Puget Sound	102	104
North Puget Sound	106	110
Olympic Peninsula	150	156

Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation and flood control. Reservoir storage in the Yakima Basin was 240,800-acre feet, 60% of average for the Upper Reaches and 69,800-acre feet, 63% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 38% of average for January 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 64,600 acre feet, 59% of average and 27% of capacity; Chelan Lake, 409,400 acre feet, 103% of average and 61% of capacity; and the Skagit River reservoirs at 99% of average and 81% of capacity.

BASIN	PERCENT OF CAPACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane	27	59
Colville-Pend Oreille	96	107
Okanogan-Methow	26	38
Wenatchee-Chelan	61	103
Upper Yakima	29	60
Lower Yakima	30	63
North Puget Sound	81	99

For more information contact your local Natural Resources Conservation Service office.

Streamflow

January forecasts vary from 120% of average for the Klickitat River near Glenwood to 74% of average for salmon Creek near Conconully. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 106%; Green River, 101%; and Skagit River, 96%. Some Eastern Washington streams include the Yakima River near Parker, 101%: Wenatchee River at Plain, 100%; and Spokane River near Post Falls, 106%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. Caution should be used when using early season forecasts for critical water resource management decisions.

Eastern Washington December streamflows were, for the most part, below average due to cooler temperatures. West-side streamflows on the other hand were slightly above normal, including some localized flooding, due to above average precipitation, during the month. The Priest River near the town of Priest River had the highest reported flows with 127% of average. The Snake River below Ice Harbor Dam with 54% of average, was the lowest in the state. Other streamflows were the following percentage of average: the Cowlitz, 110%; the Spokane at Spokane, 66%; the Columbia below Rock Island Dam, 79%; and the Cle Elum near Roslyn, 74%.

BASIN	PERCENT OF AVERAGE MOST PROBABLE FORECAST (50 PERCENT CHANCE OF EXCEEDENCE)
Spokane	106
Colville-Pend Oreille	102-106
Okanogan-Methow	74-92
Wenatchee-Chelan	95-102
Upper Yakima	101-106
Lower Yakima	98-120
Walla Walla	116-118
Lower Snake	92-102
Cowlitz-Lewis	99-120
White-Green-Puyallup	99-101
Central Puget Sound	104-108
North Puget Sound	96-109
Olympic Peninsula	104-107

STREAM	PERCENT OF AVERAGE DECEMBER STREAMFLOWS
Pend Oreille Below Box Canyon	76
Kettle at Laurier	94
Columbia at Birchbank	87
Spokane at Long Lake	75
Similkameen at Nighthawk	55
Okanogan at Tonasket	83
Methow at Pateros	87
Chelan at Chelan	80
Wenatchee at Pashastin	73
Yakima at Cle Elum	74
Yakima at Parker	73
Naches at Naches	65
Grande Ronde at Troy	56
Snake below Lower Granite Dam	59
SF Walla Walla near Milton Freewater	74
Columbia River at The Dalles	73
Lewis at Ariel	115
Cowlitz below Mayfield Dam	110
Skagit at Concrete	91

For more information contact your local Natural Resources Conservation Service office.

BASIN SUMMARY OF SNOW COURSE DATA

JANUARY 2002

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
AHTANUM R.S.	3100	1/01/02	---	4.7E	2.0	3.7
ALPINE MEADOWS SNTL	3500	1/01/02	---	35.7	15.1	20.1
ASHLEY DIVIDE	4820	1/02/02	13	2.6	2.8	3.4
BADGER PASS SNOTEL	6900	1/01/02	---	10.5	6.9	15.2
BARKER LAKES SNOTEL	8250	1/01/02	---	4.5	5.6	6.7
BARNES CREEK CAN.	5320	12/30/01	34	9.2	6.3	9.5
BASIN CREEK SNOTEL	7180	1/01/02	---	2.3	4.0	3.7
BEAVER CREEK TRAIL	2200	12/28/01	30	7.2	5.9	6.7
BEAVER PASS	3680	12/28/01	43	15.0	4.8	11.9
BERNE-MILL CREEK (d)	3170	12/31/01	49	14.0	9.6	12.6
BLACK PINE SNOTEL	7100	1/01/02	---	2.3	3.9	5.2
BLEWETT PASS#2SNOTEL	4270	1/01/02	27	6.6	4.7	8.3
BRENDA MINE CAN.	4450	1/01/02	---	9.1	--	6.7
BROWN TOP AM	6000	12/27/01	110	36.8	10.4	27.3
BUMPING LAKE (NEW)	3400	1/01/02	---	10.0E	6.6	7.2
BUMPING RIDGE SNOTEL	4600	1/01/02	---	17.0	7.9	12.1
BUNCHGRASS MDWSNOTEL	5000	1/01/02	---	16.6	8.3	12.6
CAYUSE PASS	5300	1/01/02	---	36.5E	17.3	34.8
CHESSMAN RESERVOIR	6200	12/27/01	4	.6	1.4	1.5
CHIWAUKUM G.S.	2500	12/31/01	23	4.6	4.3	5.2
COMBINATION SNOTEL	5600	1/01/02	---	1.4	2.2	2.2
COPPER BOTTOM SNOTEL	5200	1/01/02	---	3.7	3.4	5.3
CORRAL PASS SNOTEL	6000	1/01/02	---	19.4	8.6	15.8
COUGAR MTN. SNOTEL	3200	1/01/02	---	11.0	5.1	8.5
COYOTE HILL	4200	12/31/01	15	3.0	3.0	4.3
DALY CREEK SNOTEL	5780	1/01/02	---	3.1	4.3	4.9
DEVILS PARK	5900	12/26/01	74	23.8	10.4	20.8
DISCOVERY BASIN	7050	12/27/01	13	1.8	4.4	4.2
DIX HILL	6400	12/30/01	19	3.3	4.5	4.5
DOMMERIE FLATS	2200	12/27/01	19	4.7	4.5	3.9
EAST RAGGED SADDLE	3740	1/01/02	54	16.5	8.2	9.4
EASY PASS AM	5200	1/01/02	---	47.0E	10.8	31.9
ELBOW LAKE SNOTEL	3200	1/01/02	57	22.6	7.8	8.6
EMERY CREEK SNOTEL	4350	1/01/02	---	5.4	3.6	7.0
ENDERBY CAN.	5800	12/30/01	74	20.5	13.4	19.1
FARRON CAN.	4000	12/27/01	22	6.3	3.9	7.0
FISH CREEK	8000	12/27/01	12	2.2	5.1	--
FISH LAKE	3370	12/27/01	50	16.8	9.6	14.5
FISH LAKE SNOTEL	3370	1/01/02	47	15.6	9.0	15.0
FLATTOP MTN SNOTEL	6300	1/01/02	---	19.0	10.2	21.4
FOURTH OF JULY SUM	3200	12/31/01	34	8.0	4.5	3.7
FREEZEOUT CK. TRAIL	3500	12/27/01	17	3.1	2.6	6.3
FROHNER MDWS SNOTEL	6480	1/01/02	---	1.9	3.2	3.4
GRASS MOUNTAIN #2	2900	1/01/02	---	5.0E	--	4.6
GRAVE CRK SNOTEL	4300	1/01/02	---	5.2	4.8	7.7
GREEN LAKE SNOTEL	6000	1/01/02	48	13.7	6.2	10.7
GROUSE CAMP SNOTEL	5380	1/01/02	---	12.8	5.9	9.6
HAND CREEK SNOTEL	5030	1/01/02	---	3.6	2.7	5.9
HARTS PASS SNOTEL	6500	1/01/02	---	19.8	11.1	22.6
HELL ROARING DIVIDE	5770	12/26/01	48	13.9	4.8	13.4
HIGH RIDGE SNOTEL	4980	1/01/02	---	12.3	8.4	10.4
HOLBROOK	4530	1/01/02	---	2.4E	2.5	4.2
HOODOO BASIN SNOTEL	6050	1/01/02	---	20.0	10.0	19.3
HUMBOLDT GLCH SNOTEL	4250	1/01/02	---	6.3	4.9	6.0
ISINTOK LAKE CAN.	5100	12/27/01	13	2.9	3.3	3.4
JUNE LAKE SNOTEL	3200	1/01/02	---	27.0	11.8	17.1
KELLOGG PEAK	5560	12/31/01	53	17.6	8.6	11.7
KLESILKWA CAN.	3450	12/30/01	19	4.2	2.5	4.6
KRAFT CREEK SNOTEL	4750	1/01/02	---	3.7	4.5	6.9
LESTER CREEK	3100	1/01/02	---	9.5E	3.2	8.5
LOLO PASS SNOTEL	5240	1/01/02	40	9.2	7.4	13.0
LONE PINE SNOTEL	3800	1/01/02	---	24.3	12.1	16.2
LOOKOUT SNOTEL	5140	1/01/02	---	15.0	8.2	13.7
LOST HORSE SNOTEL	5000	1/01/02	44	12.5	7.4	8.3
LOST LAKE SNOTEL	6110	1/01/02	---	26.4	11.4	27.1
LUBRECHT FOREST NO 3	5450	1/03/02	13	2.1	2.4	2.7
LUBRECHT FOREST NO 4	4650	1/03/02	8	1.3	1.3	1.4
LUBRECHT FOREST NO 6	4040	1/03/02	10	1.6	1.9	1.6
LUBRECHT HYDROPLOT	4200	1/03/02	14	2.0	1.9	2.5
LUBRECHT SNOTEL	4680	1/01/02	---	2.3	2.5	2.6
LYMAN LAKE SNOTEL	5900	1/01/02	---	32.9	15.8	29.7
MARIAS PASS	5250	1/03/02	18	5.3	5.8	7.3
MEADOWS CABIN	1900	12/27/01	7	2.3	2.1	3.7
MEADOWS PASS SNOTEL	3240	1/01/02	---	15.4	8.9	9.6
MERRITT	2140	12/31/01	31	7.7	7.0	7.0
MICA CREEK SNOTEL	4750	1/01/02	---	12.5	8.6	11.7
MISSEZULA MTN CAN.	5080	12/27/01	15	3.4	2.9	5.1
MONASHEE PASS CAN.	4500	12/30/01	21	5.3	3.9	6.6
MOOSE CREEK SNOTEL	6200	1/01/02	---	5.9	4.2	7.8
MORRISSEY RIDGE CAN.	6100	1/01/02	---	12.6	4.8	28.4
MORSE LAKE SNOTEL	5400	1/01/02	---	29.8	7.2	24.1
MOSES MTN SNOTEL	4800	1/01/02	---	10.4	3.4	7.1
MOSQUITO RDG SNOTEL	5200	1/01/02	---	17.3	7.7	15.5
MOULTON RESERVOIR	6850	12/27/01	10	1.1	3.8	3.5
MOUNT CRAG SNOTEL	4050	1/01/02	55	17.5	10.1	10.7
MT. KOBAU CAN.	5500	12/30/01	26	7.3	4.9	5.4
MOUNT GARDNER SNOTEL	2860	1/01/02	---	11.5	6.4	7.4
N.F. ELK CR SNOTEL	6250	1/01/02	---	4.1	3.9	5.1
NEW HOZOMEEN LAKE	2800	12/26/01	12	2.8	2.0	--
NEZ PERCE CMP SNOTEL	5650	1/01/02	---	5.2	4.1	6.1
NOISY BASIN SNOTEL	6040	1/01/02	---	16.8	7.3	19.8
OLALLIE MDWS SNOTEL	3960	1/01/02	---	22.4	13.9	22.2
OLALLIE MEADOWS	3630	1/01/02	---	22.4	12.4	20.6
OPHIR PARK	7150	12/30/01	22	4.4	5.6	6.6
PARADISE PARK SNOTEL	5500	1/01/02	---	33.8	16.9	32.8
PARK CK RIDGE SNOTEL	4600	1/01/02	76	27.0	11.3	22.5
PETERSON MDW SNOTEL	7200	1/01/02	---	1.7	4.3	4.4
PIGTAIL PEAK SNOTEL	5900	1/01/02	81	25.6	12.3	23.1
PIKE CREEK SNOTEL	5930	1/01/02	---	7.5	5.0	12.0
PIPESTONE PASS	7200	12/29/01	8	1.0	2.0	2.2
POPE RIDGE SNOTEL	3540	1/01/02	35	9.0	5.8	9.8
POTATO HILL SNOTEL	4500	1/01/02	---	17.1	9.1	12.4
QUARTZ PEAK SNOTEL	4700	1/01/02	---	15.0	6.5	10.2
RAINY PASS SNOTEL	4780	1/01/02	---	19.8	8.4	19.9
REX RIVER SNOTEL	1900	1/01/02	48	15.9	7.4	13.0
ROCKER PEAK SNOTEL	8000	1/01/02	---	4.5	7.0	6.4
SF THUNDER CK AM	2200	1/01/02	---	5.5E	.0	5.0
SADDLE MTN SNOTEL	7900	1/01/02	---	9.5	7.1	11.7
SALMON MDWS SNOTEL	4500	1/01/02	25	6.8	2.9	5.3
SAVAGE PASS SNOTEL	6170	1/01/02	40	10.1	7.3	11.7
SAWMILL RIDGE	4700	1/01/02	---	15.0E	5.5	13.8
SCHREIBERS MDW AM	3400	1/01/02	---	27.0E	7.5	23.2
SHEEP CANYON SNOTEL	4050	1/01/02	---	21.7	10.9	15.4
SKALKAHO SNOTEL	7260	1/01/02	---	8.5	7.4	10.3
SKOOKUM CREEK SNOTEL	3920	1/01/02	---	19.8	6.1	10.8
SPENCER MDW SNOTEL	3400	1/01/02	---	20.4	12.5	12.5
SPIRIT LAKE SNOTEL	3100	1/01/02	---	9.5	2.4	3.2
SPOTTED BEAR MTN.	7000	1/01/02	---	5.1E	4.1	6.9
STAHL PEAK SNOTEL	6030	1/01/02	---	17.3	8.0	17.1
STAMPEDE PASS SNOTEL	3860	1/01/02	---	19.8	12.0	19.4
STEVENS PASS SNOTEL	4070	1/01/02	---	17.6	10.7	19.1
STEVENS PASS SAND SD	3700	12/31/01	54	15.4	10.5	15.3
STORM LAKE	7780	12/27/01	16	2.6	6.0	5.5
SUMMERLAND RES CAN.	4200	12/27/01	17	4.1	2.5	4.4
SUNSET SNOTEL	5540	1/01/02	---	7.0	6.2	13.6
SURPRISE LKS SNOTEL	4250	1/01/02	---	26.1	13.6	20.3
TEN MILE LOWER	6600	12/27/01	9	1.6	3.0	3.0
TEN MILE MIDDLE	6800	12/27/01	12	2.4	4.3	4.5
TINKHAM CREEK SNOTEL	3000	1/01/02	---	14.9	13.8	12.3
TOUCHET #2 SNOTEL	5530	1/01/02	---	20.2E	9.7	14.7
TRINKUS LAKE	6100	1/01/02	---	17.5E	9.9	19.4
TROUGH #2 SNOTEL	5310	1/01/02	24	6.9	4.3	5.3
TRUMAN CREEK	4060	12/30/01	11	1.8	2.6	2.0
TUNNEL AVENUE	2450	12/28/01	37	10.4	8.5	8.3
TV MOUNTAIN	6800	1/05/02	29	6.8	5.6	7.8
TWELVEMILE SNOTEL	5600	1/01/02	---	6.6	5.4	7.5
TWIN LAKES SNOTEL	6400	1/01/02	---	17.9	10.2	17.5
TWIN SPIRIT DIVIDE	3480	1/01/02	38	10.0	5.7	6.6
UPPER HOLLAND LAKE	6200	1/01/02	---	14.5E	7.8	15.2
UPPER WHEELER SNOTEL	4400	1/01/02	---	6.2	6.2	5.8
WARM SPRINGS SNOTEL	7800	1/01/02	---	7.9	7.3	9.4
WEASEL DIVIDE	5450	1/02/02	52	16.3	6.4	15.2
WELLS CREEK SNOTEL	4200	1/01/02	48	15.8	6.9	14.8
WHITE PASS ES SNOTEL	4500	1/01/02	---	11.2	5.9	10.7

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
http://www.wa.nrcs.usda.gov/snow/snow.htm

Oregon:
http://www.or.nrcs.usda.gov/snow/snow.htm

Idaho:
http://idsnow.id.nrcs.usda.gov

National Water and Climate Center (NWCC):
http://www.wcc.nrcs.usda.gov

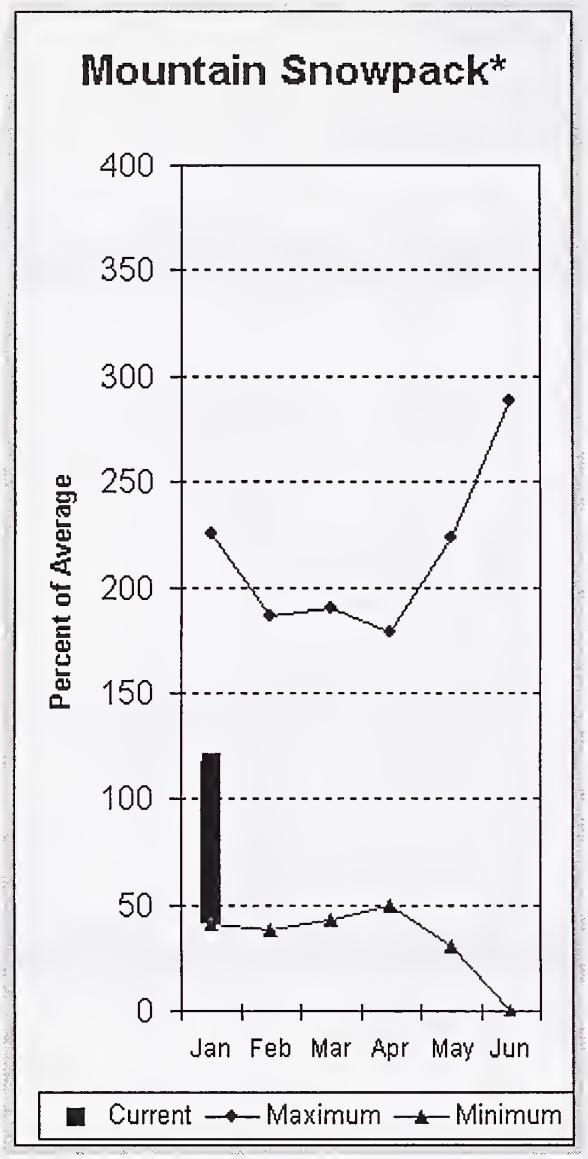
NWCC Anonymous FTP Server:
ftp.wcc.nrcs.usda.gov

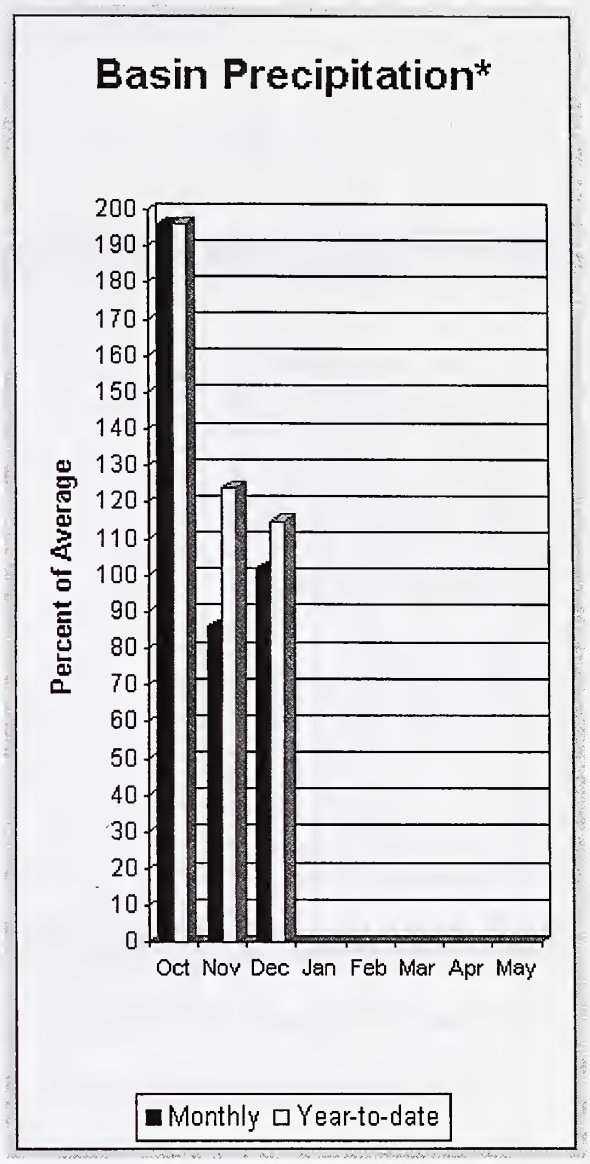
USDA-NRCS Agency Homepages

Washington:
http://www.wa.nrcs.usda.gov/nrcs

NRCS National:
http://www.ftw.nrcs.usda.gov

Spokane River Basin





*Based on selected stations

The January 1 forecasts for summer runoff within the Spokane River Basin are 106% of average near Post Falls and 106% at Long Lake. The forecast is based on a basin snowpack that is 117% of average and precipitation that is 115% of average for the water year. Precipitation for December was near normal at 102% of average. Streamflow on the Spokane River at Long Lake, was 75% of average for December. January 1 storage in Coeur d'Alene Lake, was 64,600-acre feet, 59% of average and 27% of capacity. Snowpack at Quartz Peak SNOTEL site was 147% of average with 15 inches of water content. Average temperatures in the Spokane basin were near normal for December and 1 degree above for the water year.

For more information contact your local Natural Resources Conservation Service office.

SPOKANE RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<======= Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SPOKANE near Post Falls (2)	APR-SEP	1956	2464	2810	106	3156	3664	2650
	APR-JUL	1880	2374	2710	106	3046	3540	2550
SPOKANE at Long Lake (2)	APR-JUL	1968	2606	3039	107	3472	4110	2850
	APR-SEP	2135	2807	3264	106	3721	4393	3070

SPOKANE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
COEUR D'ALENE	238.5	64.6	27.0	110.1

SPOKANE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SPOKANE RIVER	13	187	122
NEWMAN LAKE	1	231	147

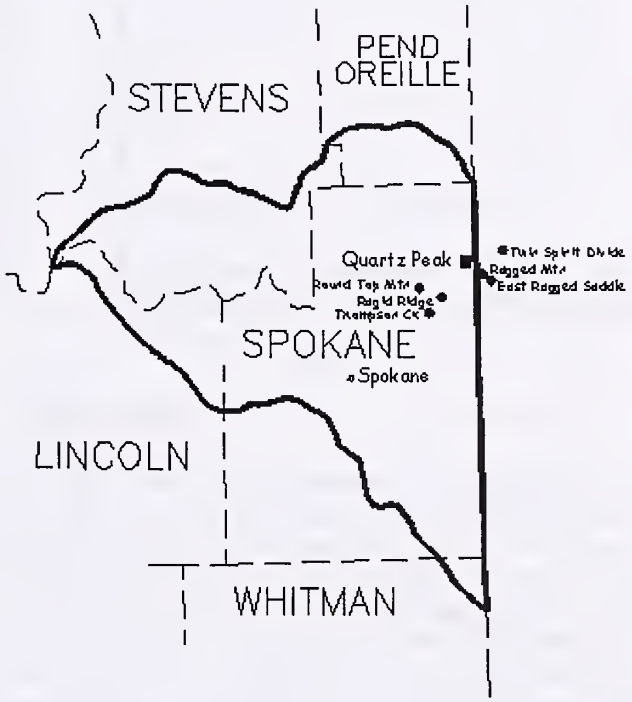
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

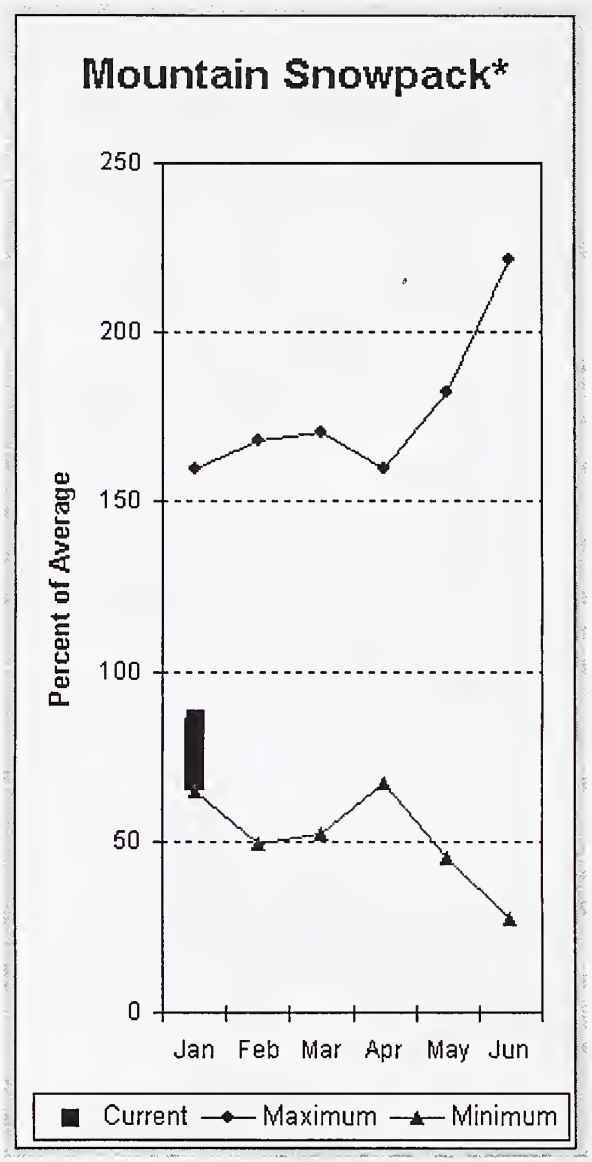
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

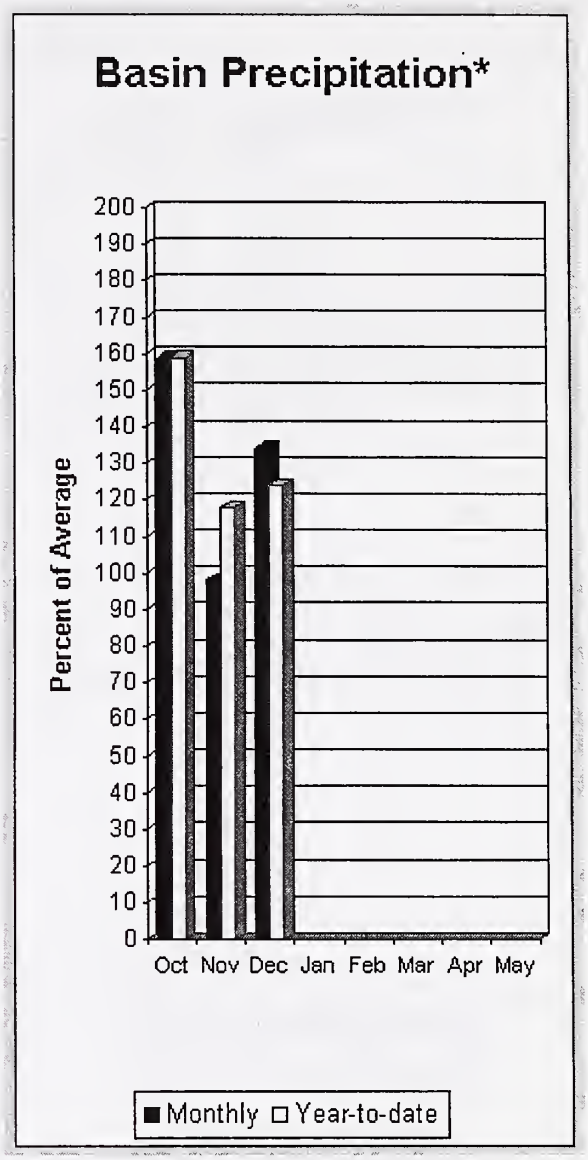
Spokane River Basin
Percent of Average
January 1, 2002

Snowpack - 117%
Precipitation - 115%
Reservoir Capacity -59%



Colville - Pend Oreille River Basins





*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 103%, Colville at Kettle Falls is 106%, and Priest River near the town of Priest River is 102%. December streamflow was 76% of average on the Pend Oreille River, 87% on the Columbia at the International Boundary and 94% on the Kettle River. January 1 snow cover was 81% of average in the Pend Oreille Basin and 90% in the Kettle River Basin. Bunchgrass Meadows SNOTEL site had 16.6 inches of snow water on the snow pillow. Normally Bunchgrass would have 12.6 inches on January 1. Precipitation during December was 134% of average, bringing the year-to-date precipitation to 124% of average. Reservoir storage in Roosevelt and Banks lakes was reported to be 107% of average and 96% of capacity on January 1. Average temperatures were slightly below normal for December and 1 degree above for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
PEND OREILLE Lake Inflow (2)	APR-JUL	6675	9149	10830	85	12511	14985	12700
	APR-SEP	5929	9437	11820	85	14203	17711	13900
PRIEST near Priest River (1,2)	APR-JUL	634	776	840	104	904	1046	810
	APR-SEP	669	817	885	102	953	1101	865
PEND OREILLE bl Box Canyon (2)	APR-JUL	7425	9566	11020	85	12474	14615	12900
	APR-SEP	6904	9944	12010	85	14076	17116	14100
CHAMOKANE CREEK near Long Lake	MAY-AUG	4.4	7.5	9.6	94	11.7	14.8	10.2
COLVILLE at Kettle Falls	APR-SEP	97	129	150	106	171	203	141
	APR-JUL	88	118	138	108	158	188	128
KETTLE near Laurier	APR-SEP	1629	1868	2030	103	2192	2431	1970
	APR-JUL	1568	1792	1945	104	2098	2322	1870
COLUMBIA at Birchbank (1,2)	APR-JUL	25207	30910	33500	95	36090	41793	35140
	APR-SEP	31189	38417	41700	95	44983	52211	43810
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	42542	55029	60700	94	66371	78858	64850
	APR-JUL	35876	46345	51100	94	55855	66324	54543

COLVILLE - PEND OREILLE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROOSEVELT	5232.0	4416.3	3490.1	---
BANKS	715.0	687.1	702.6	640.0

COLVILLE - PEND OREILLE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
COLVILLE RIVER	0	0	0
PEND OREILLE RIVER	60	133	81
KETTLE RIVER	3	148	90

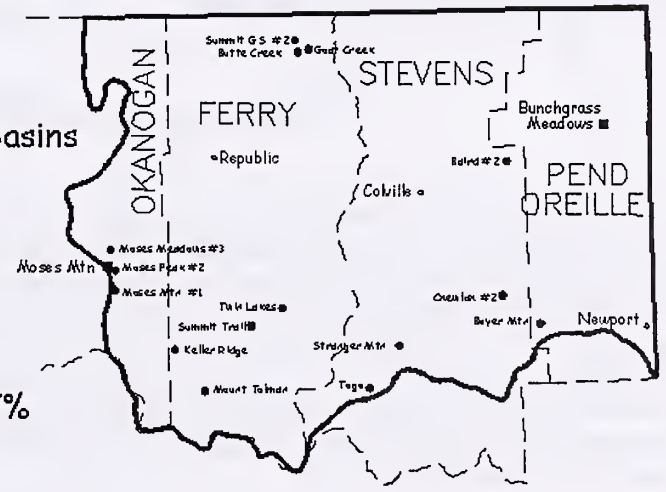
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

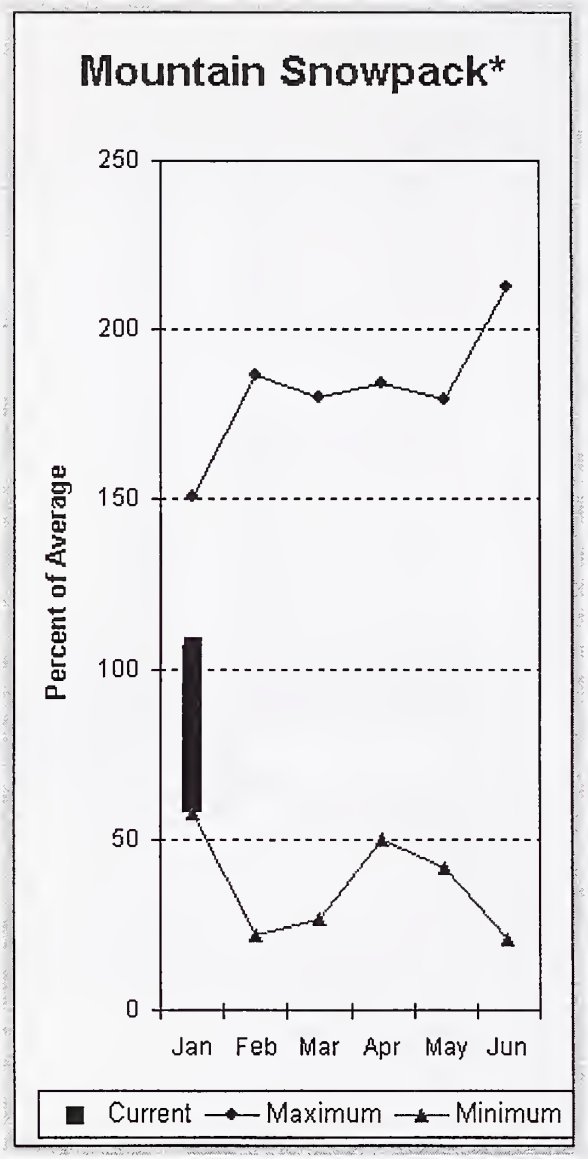
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

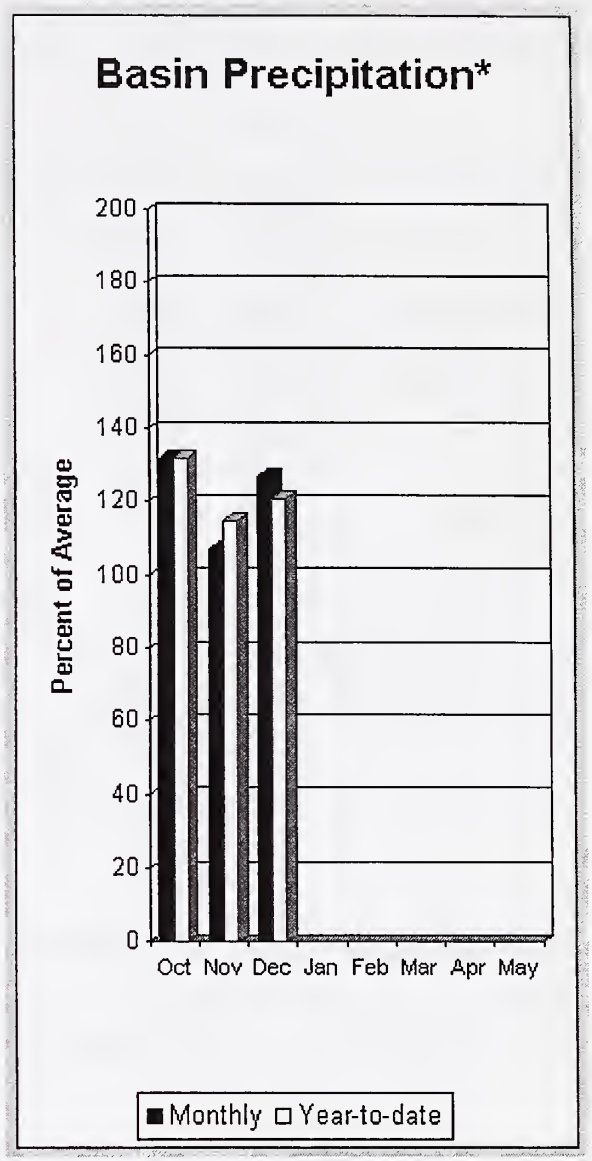
Colville-Pend Oreille River Basins
Percent of Average
January 1, 2002

Snowpack - 86%
Precipitation - 124%
Reservoir Capacity - 107%



Okanogan - Methow River Basins





*Based on selected stations

Summer runoff average forecast for the Okanogan River is 83%, Similkameen River is 90%, Methow River is 92% and Salmon Creek is 74%. January 1 snow cover on the Okanogan was 99% of average and Methow was 97%. December precipitation in the Okanogan-Methow was 127% of average, with precipitation for the water year at 121% of average. December streamflow for the Methow River was 87% of average, 83% for the Okanogan River and 55% for the Similkameen. Snow-water content at Harts Pass SNOTEL was 19.8 inches. Average for this site is 22.6 inches on January 1. Combined storage in the Conconully Reservoirs was 6,100-acre feet, which is 26% of capacity and 38% of the January 1 average. Temperatures were 3-4 degrees above normal for the past month and 2-3 degrees above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SIMILKAMEEN near Nighthawk (1)	APR-JUL	555	1009	1215	90	1421	1875	1350
	APR-SEP	599	1081	1300	90	1519	2001	1450
OKANOGAN near Tonasket (1)	APR-JUL	513	1065	1315	83	1565	2117	1580
	APR-SEP	593	1196	1470	83	1744	2347	1770
SALMON CREEK near Conconully	APR-JUL	1.0	8.7	14.8	74	21	30	20
	APR-SEP	0.9	9.2	15.5	74	22	31	21
BEAVER CREEK below SF near Twisp	APR-SEP	2.4	7.6	11.1	92	14.6	19.8	12.1
	APR-JUL	1.7	6.8	10.2	92	13.6	18.7	11.1
METHOW RIVER near Pateros	APR-SEP	596	780	905	92	1030	1214	985
	APR-JUL	555	723	837	92	951	1119	910

OKANOGAN - METHOW RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
SALMON LAKE	10.5	3.5	7.0	8.5
CONCONULLY RESERVOIR	13.0	2.6	5.4	7.7

OKANOGAN - METHOW RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OKANOGAN RIVER	9	157	99
OMAK CREEK	1	306	146
SANPOIL RIVER	0	0	0
SIMILKAMEEN RIVER	1	117	67
TOATS COULEE CREEK	0	0	0
CONCONULLY LAKE	1	234	128
METHOW RIVER	3	207	97

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

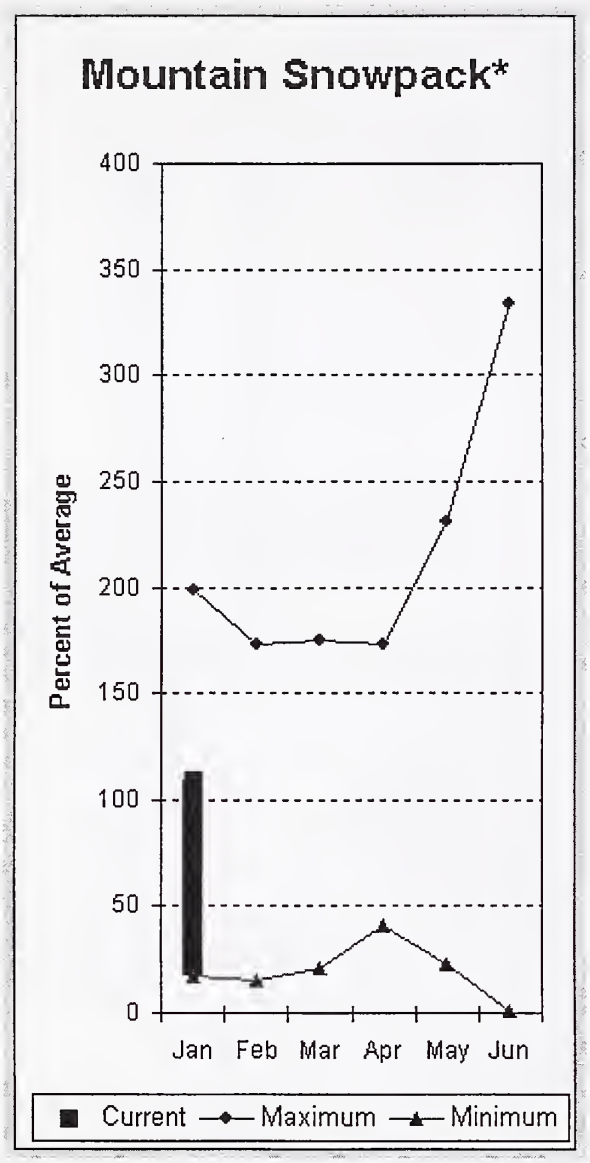
The average is computed for the 1971-2000 base period.

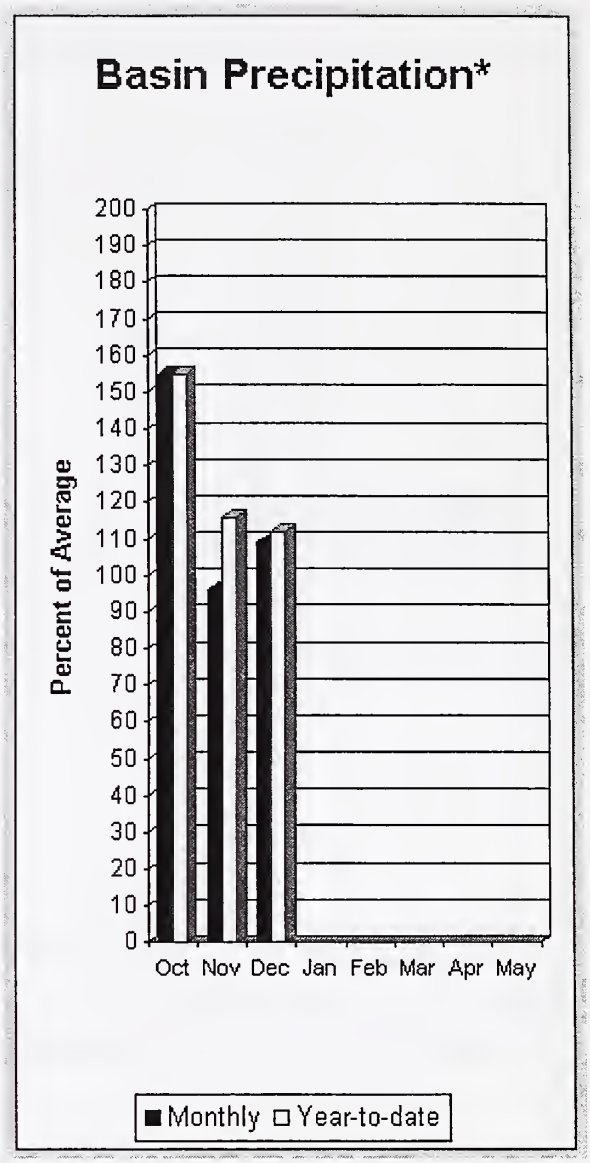
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Okanogan-Methow River Basins
Percent of Average
January 1, 2002

Snowpack - 107%
Precipitation - 121%
Reservoir Capacity - 38%

Wenatchee - Chelan River Basins





*Based on selected stations

Precipitation during December was 109% of average in the basin and 112% for the year-to-date. Runoff for Entiat River is forecast to be 102% of average for the summer. The January-September average forecast for Chelan River is 95%, Wenatchee River at Plain is 100% and Stehekin is 100%. Icicle, Stemilt and Squilchuck creeks are all expected to fall into the same forecast range. December average streamflows on the Chelan River were 80% and on the Wenatchee River 73%. January 1 snowpack in the Wenatchee River Basin was 105% of average; the Chelan, 112%; the Entiat, 92%; Stemilt Creek, 107% and Colockum Creek, 130%. Reservoir storage in Lake Chelan was 409,400-acre feet, 103% of January 1 average and 61% of capacity. Lyman Lake SNOTEL had the most snow water with 32.9 inches of water. This site would normally have 29.7 inches on January 1. Temperatures were 2-3 degrees above normal for December and near normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CHELAN RIVER near Chelan	APR-SEP	979	1069	1130	95	1191	1281	1190
	APR-JUL	878	950	998	95	1046	1118	1050
STEHEKIN near STEHEKIN	APR-SEP	713	780	825	100	870	937	825
	APR-JUL	612	655	685	98	715	758	700
ENTIAT RIVER near Ardenvoir	APR-SEP	172	215	244	102	273	316	240
	APR-JUL	153	192	219	102	246	285	215
WENATCHEE at Plain	APR-SEP	905	1079	1197	100	1315	1489	1200
	APR-JUL	830	971	1067	99	1163	1304	1080
WENATCHEE R. at Peshastin	APR-SEP	1170	1450	1640	100	1830	2110	1640
	APR-JUL	939	1261	1480	100	1699	2021	1480
STEMILT nr Wenatchee (miners in)	MAY-SEP	82	111	131	95	151	180	138
ICICLE CREEK near Leavenworth	APR-SEP	276	314	340	99	366	404	345
	APR-JUL	254	290	314	98	338	374	320
COLUMBIA R. bl Rock Island Dam (2)	APR-SEP	51122	60517	66900	95	73283	82678	70485
	APR-JUL	39735	49837	56700	95	63563	73665	59736

WENATCHEE - CHELAN RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CHELAN LAKE	676.1	409.4	351.1	396.9

WENATCHEE - CHELAN RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CHELAN LAKE BASIN	4	229	112
ENTIAT RIVER	1	155	92
WENATCHEE RIVER	11	157	105
SQUILCHUCK CREEK	0	0	0
STEMILT CREEK	1	100	107
COLOCKUM CREEK	1	160	130

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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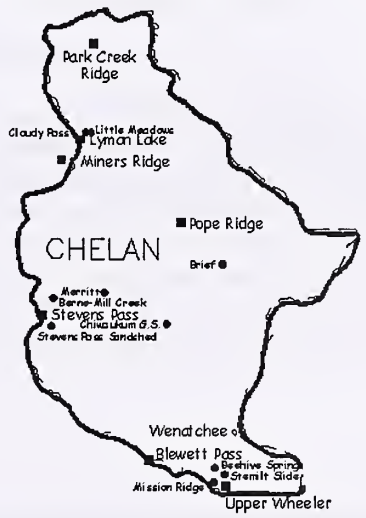
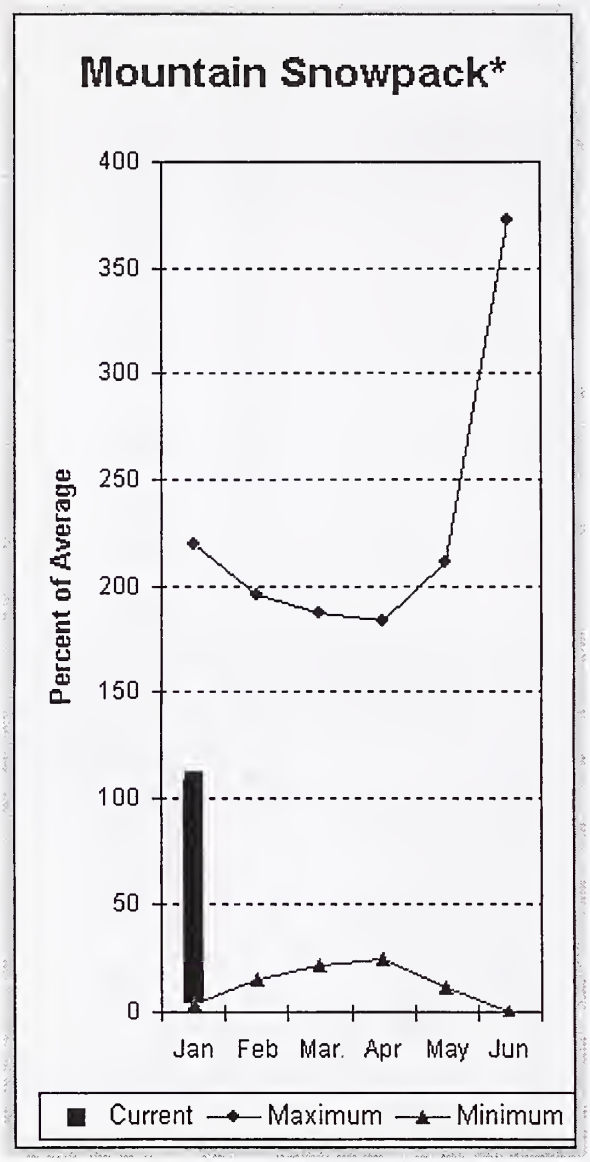
(2) - The value is natural flow - actual flow may be affected by upstream water management.

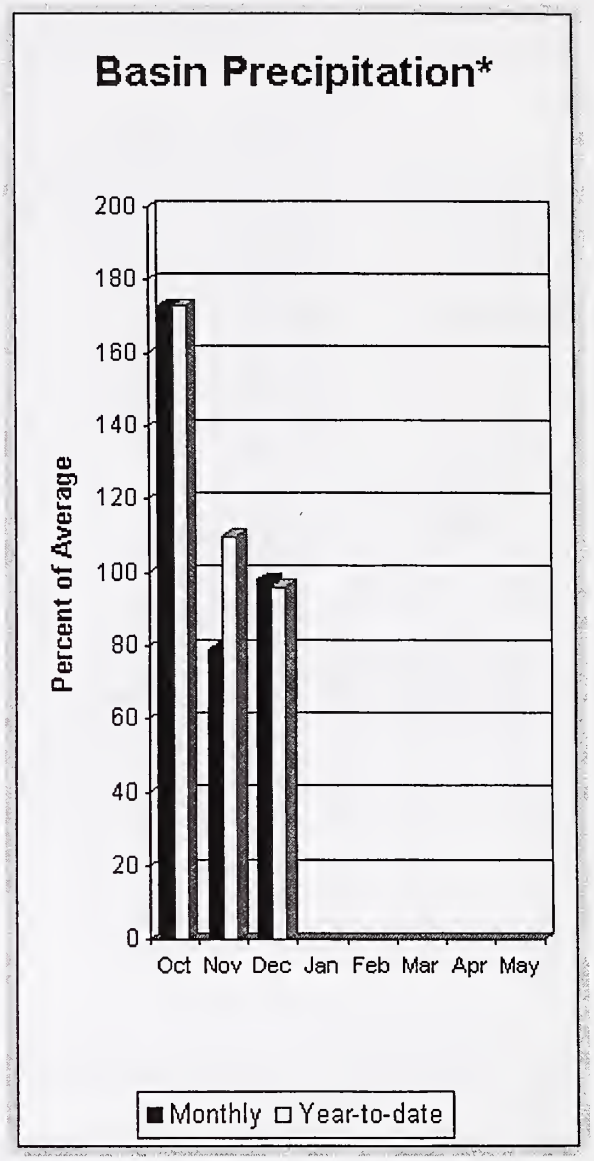
Wenatchee-Chelan River Basins
Percent of Average
January 1, 2002

Snowpack - 109%
Precipitation - 112%
Reservoir Capacity - 103%



Upper Yakima River Basin





*Based on selected stations

January 1 reservoir storage for the Upper Yakima reservoirs was 240,800-acre feet, 60% of average. Forecasts for the Yakima River at Cle Elum are 102% of average and the Teanaway River near Cle Elum is at 101%. Lake inflows are all forecasted to be near average this summer. December streamflows within the basin were Yakima near Cle Elum at 74% and Cle Elum River near Roslyn at 74%. January 1 snowpack was 108% based upon 9 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 98% of average for December and 96% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they January differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KEECHELUS LAKE INFLOW	APR-JUL	91	113	128	106	143	165	121
	APR-SEP	101	125	141	106	157	181	133
KACHESS LAKE INFLOW	APR-JUL	78	100	114	103	128	150	111
	APR-SEP	85	108	123	103	138	161	120
CLE ELUM LAKE INFLOW	APR-JUL	318	380	422	103	464	526	410
	APR-SEP	343	413	460	102	507	577	450
YAKIMA at Cle Elum	APR-JUL	620	754	845	103	936	1070	820
	APR-SEP	678	822	920	102	1018	1162	905
TEANAWAY near Cle Elum	APR-JUL	104	128	144	101	160	184	143
	APR-SEP	107	131	147	101	163	187	146

UPPER YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
KEECHELUS	157.8	59.2	26.1	78.0
KACHESS	239.0	66.7	113.7	125.5
CLE ELUM	436.9	114.9	95.2	194.7

UPPER YAKIMA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER YAKIMA RIVER	10	163	107

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

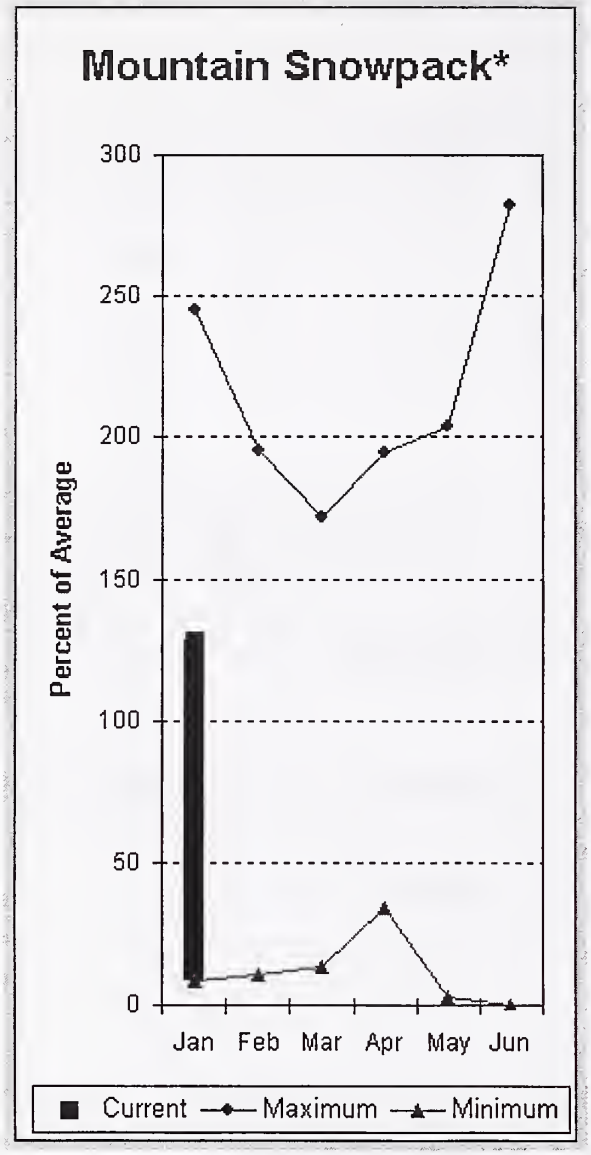
The average is computed for the 1971-2000 base period.

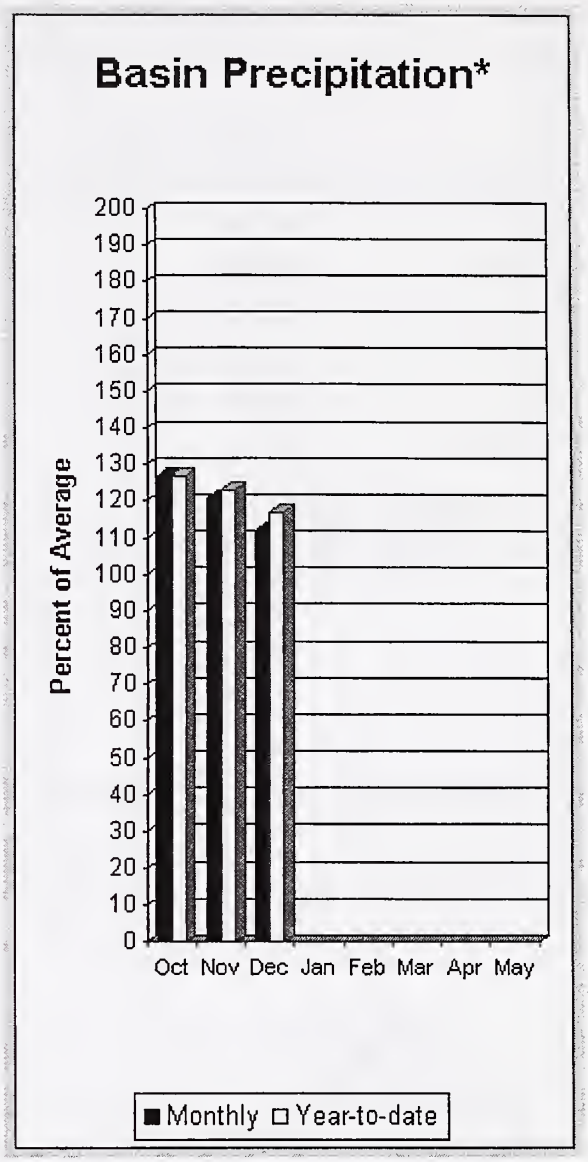
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Upper Yakima River Basin
Percent of Average
January 1, 2002

Snowpack - 108%
Precipitation - 96%
Reservoir Capacity - 60%

Lower Yakima River Basin





*Based on selected stations

December average streamflows within the basin were: Yakima River near Parker, 73%; Naches River near Naches, 65%; and Yakima River at Kiona, 65%. January 1 reservoir storage for Bumping and Rimrock reservoirs was 69,800-acre feet, 63% of average. Forecast averages for Yakima River near Parker are 101%; American River near Nile, 99%; Ahtanum Creek, 102%; and Klickitat River near Glenwood, 120%. January 1 snowpack was 128% based upon 9 snow courses and SNOTEL readings within the Lower Yakima Basin. Precipitation was 112% of average for December and 117% year-to-date for water. Temperatures were 3 degrees above normal for the month and 1 degree above average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they January differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<Drier 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Probable) (1000AF)	(% AVG.)	Wetter>> 30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BUMPING LAKE INFLOW	APR-SEP	100	124	140	106	156	180	132
	APR-JUL	96	117	131	107	145	166	122
AMERICAN RIVER near Nile	APR-SEP	86	104	117	99	130	148	118
	APR-JUL	79	96	108	100	120	137	108
RIMROCK LAKE INFLOW	APR-SEP	185	218	240	100	262	295	240
	APR-JUL	161	188	207	101	226	253	205
NACHES near Naches	APR-SEP	610	735	820	98	905	1030	835
	APR-JUL	549	666	745	99	824	941	755
AHTANUM CREEK nr Tampico (2)	APR-SEP	26	39	47	102	56	68	46
	APR-JUL	24	35	43	102	51	62	42
YAKIMA near Parker	APR-SEP	1516	1810	2010	101	2210	2504	1990
	APR-JUL	1376	1652	1840	102	2028	2304	1800
KLICKITAT near Glenwood	APR-JUN	116	138	152	118	166	188	129
	APR-SEP	151	178	196	120	214	241	163

Chance Of Exceeding *

LOWER YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BUMPING LAKE	33.7	14.9	3.8	10.3
RIMROCK	198.0	54.9	93.1	101.1

LOWER YAKIMA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

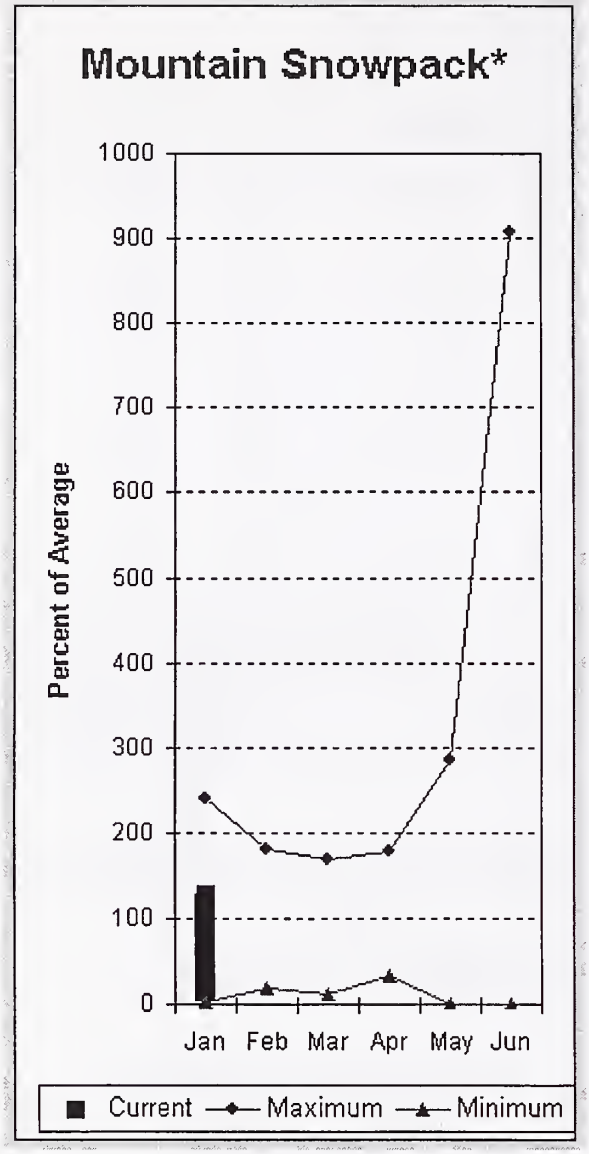
The average is computed for the 1971-2000 base period.

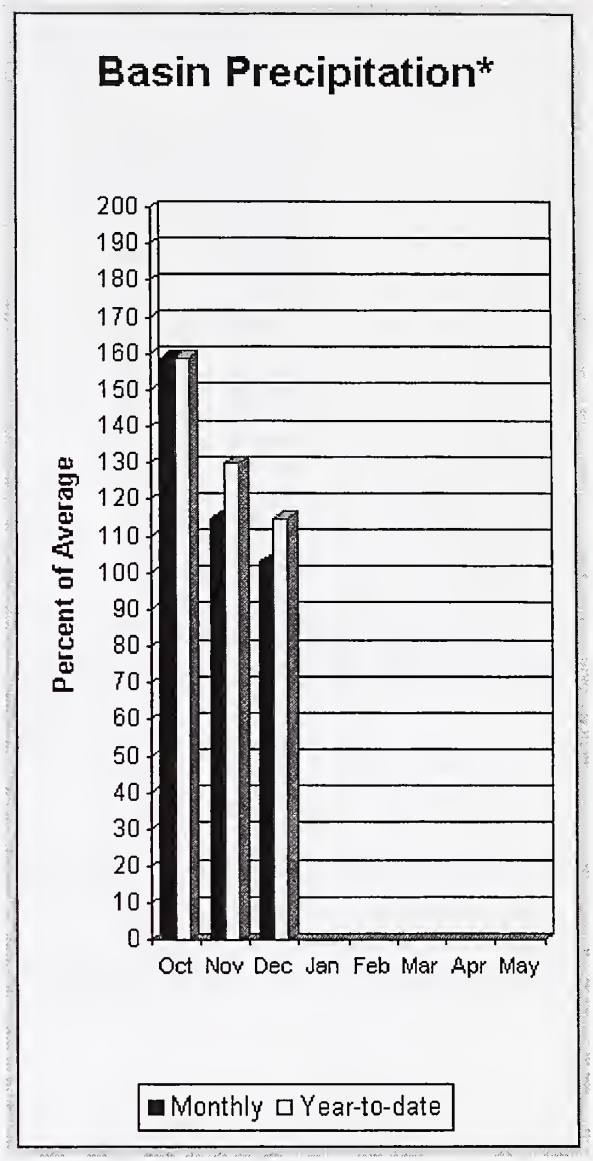
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Lower Yakima River Basin
Percent of Average
Janaury 1, 2002

Snowpack - 128%
Precipitation - 117%
Reservoir Capacity - 63%

Walla Walla River Basin





*Based on selected stations

December precipitation was 103% of average, maintaining the year-to-date precipitation at 115% of average. Snowpack in the basin was 129% of average. Streamflow forecasts are 116% of average for Mill Creek and 118% for the SF Walla Walla near Milton-Freewater. December streamflow was 74% of average for the Walla Walla River. Average temperatures were near normal for December and have averaged that way throughout the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
MILL CREEK at Walla Walla	APR-SEP	11.6	17.4	21	116	25	31	18.4
	APR-JUL	11.3	17.1	21	116	25	31	18.2
SF WALLA WALLA near Milton-Freewater	APR-JUL	51	58	63	118	67	74	53
	APR-SEP	65	73	78	118	83	91	66

WALLA WALLA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

WALLA WALLA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WALLA WALLA RIVER	2	180	129

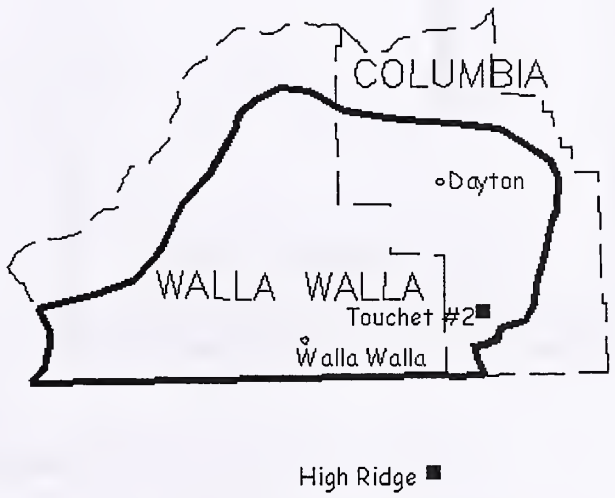
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

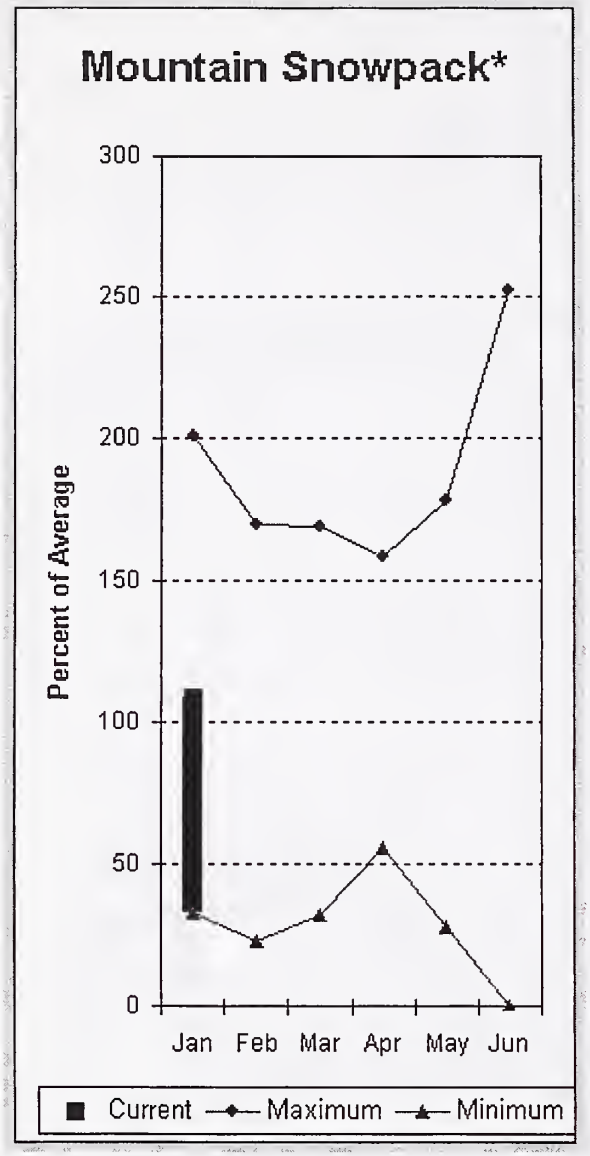
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

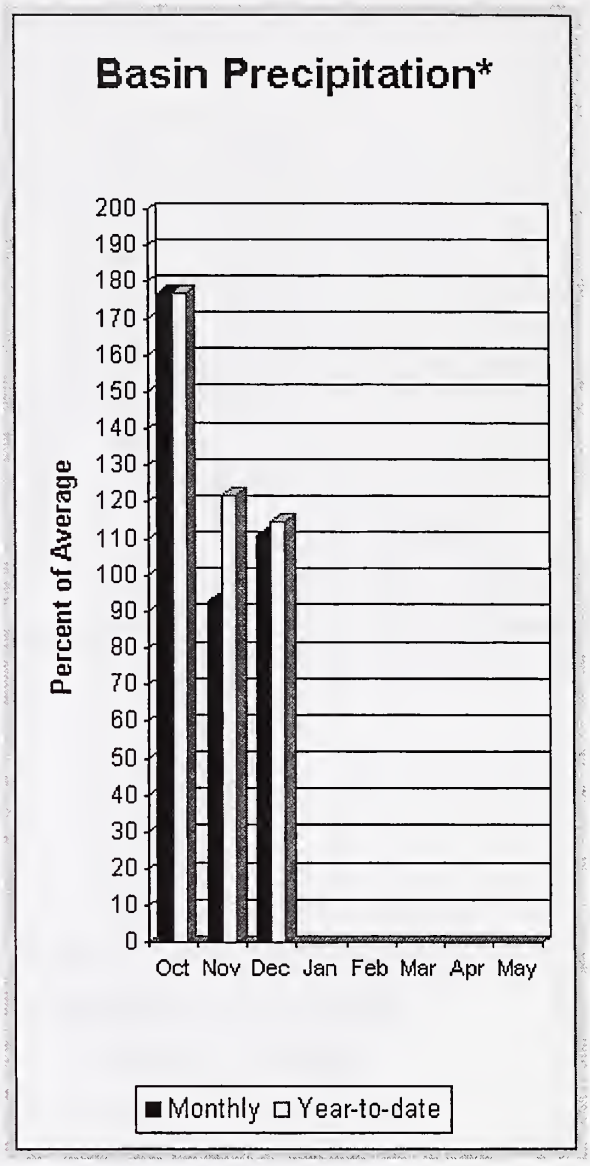
Walla Walla River Basin
Percent of Average
January 1, 2002

Snowpack - 129%
Precipitation - 115%



Lower Snake River Basin





*Based on selected stations

The April - September forecast is for 102% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 92% and 100% of normal respectively. December precipitation was 111% of average, bringing the year-to-date precipitation to 115% of average. January 1 snowpack readings averaged 108% of normal. December streamflow was 59% of average for Snake River below Lower Granite Dam and 56% for Grande Ronde River near Troy. Average temperatures were slightly below normal for December and near normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GRANDE RONDE at Troy (1)	MAR-JUL	727	1238	1470	100	1702	2213	1471
	APR-SEP	636	1100	1310	100	1520	1984	1312
CLEARWATER at Spalding (1,2)	APR-JUL	4897	6687	7500	102	8313	10103	7350
	APR-SEP	5350	7179	8010	102	8841	10670	7850
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	9127	16604	20000	92	23396	30873	21650
	APR-SEP	10282	18684	22500	92	26316	34718	24360

LOWER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

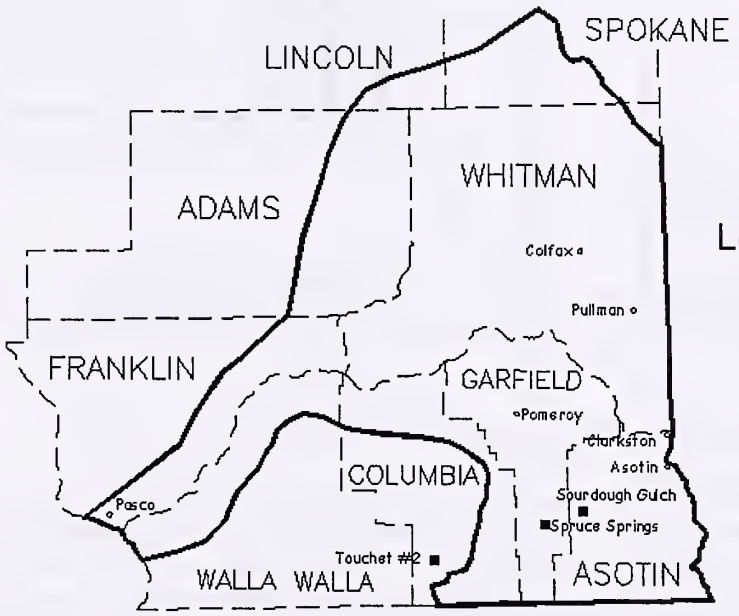
LOWER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LOWER SNAKE, GRANDE RONDE	11	161	108

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

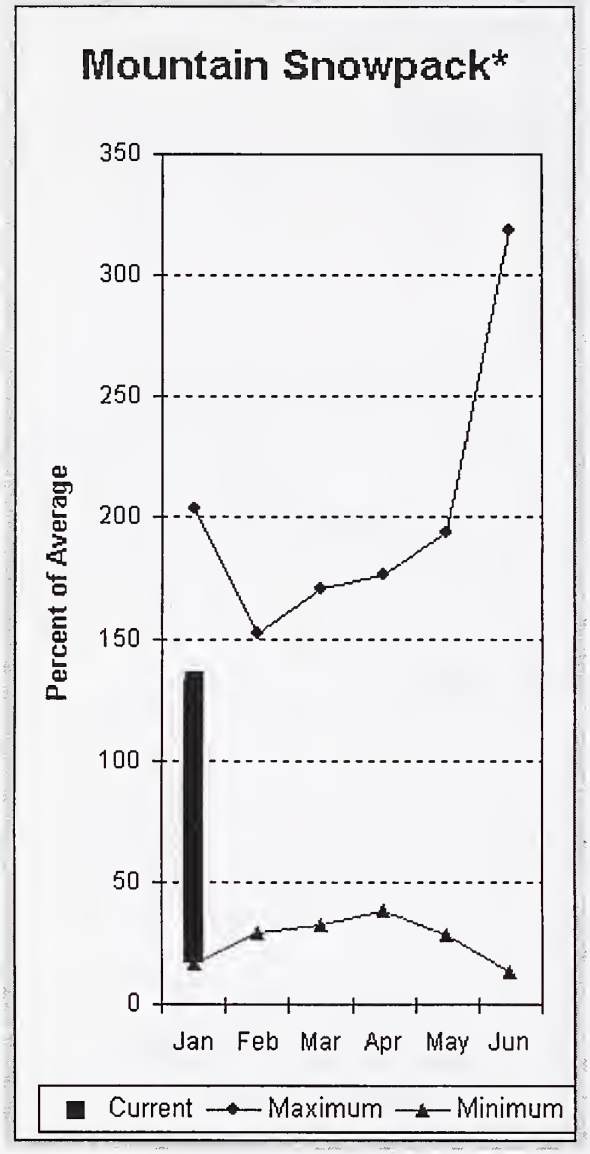
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

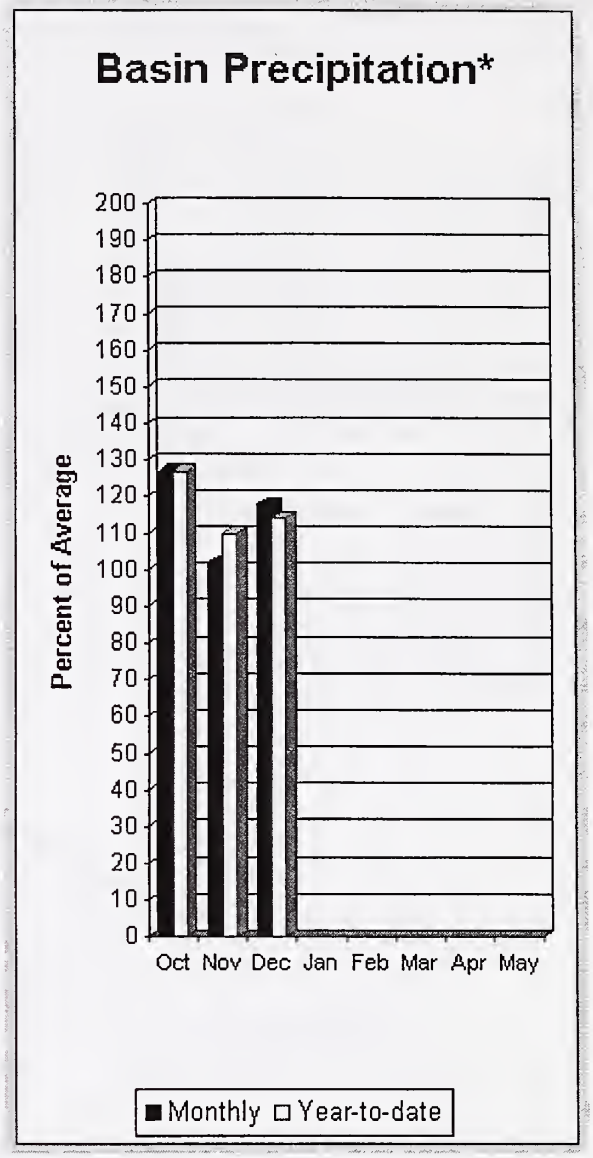


Lower Snake River Basin
Percent of Average
Janaury 1, 2002

Snowpack - 108%
Precipitation - 115%

Cowlitz - Lewis River Basins





*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 102% and Cowlitz River at Castle Rock, 99% of average. The Columbia at The Dalles is also forecasted to have near normal flows this summer. December average streamflow for Cowlitz River was 110% and 115% for Lewis River. The Columbia River at the Dalles was down slightly at 73% of average. December precipitation was 118% of average and the water-year average was 114%. January 1 snow cover for Cowlitz River was 117%, and Lewis River was 148% of average. Paradise Park SNOTEL reported the most water content for the basin with 33.8 inches. Average January 1 water content is 32.8 inches. Average temperatures were 2 degrees above normal during December and have averaged 1 degree above throughout the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LEWIS at Ariel (2)	APR-JUL	735	922	1050	102	1178	1365	1030
	APR-SEP	874	1068	1200	102	1332	1526	1180
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	500	1316	1870	97	2424	3240	1920
	APR-JUL	272	1087	1640	97	2193	3008	1690
COWLITZ R. at Castle Rock (2)	APR-SEP	623	1758	2530	99	3302	4437	2560
	APR-JUL	1628	1975	2210	99	2445	2792	2240
KLICKITAT near Glenwood	APR-JUN	116	138	152	118	166	188	129
	APR-SEP	151	178	196	120	214	241	163
COLUMBIA R. at The Dalles (2)	APR-SEP	69278	82926	92200	93	101474	115122	98982
	APR-JUL	53932	68858	79000	93	89142	104068	84760

COWLITZ - LEWIS RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

COWLITZ - LEWIS RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LEWIS RIVER	4	196	148
COWLITZ RIVER	7	208	117

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

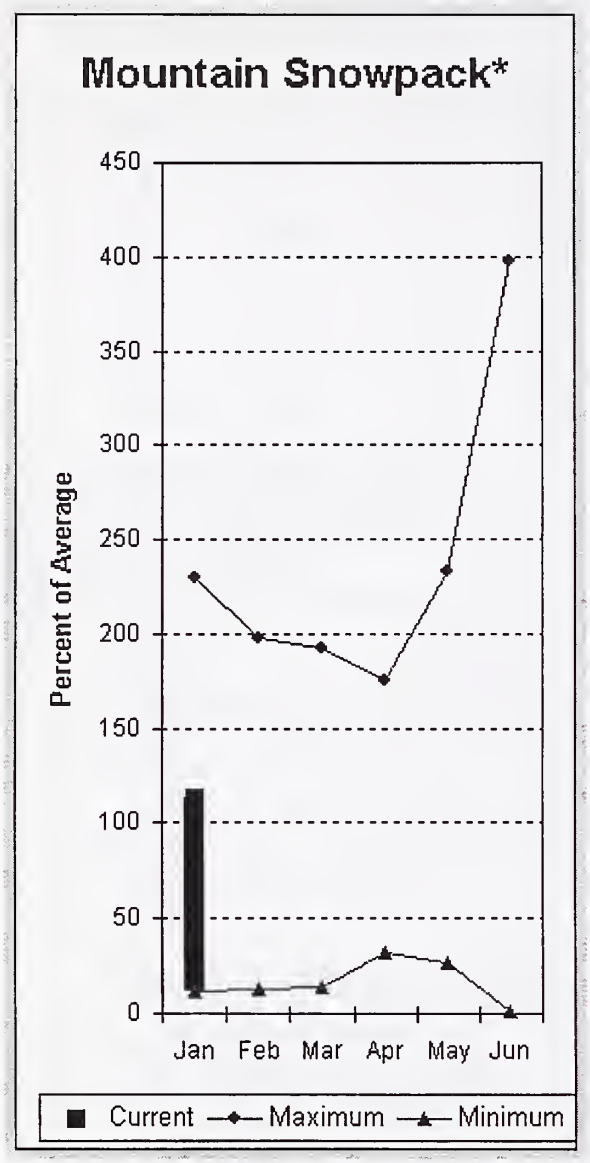
The average is computed for the 1971-2000 base period.

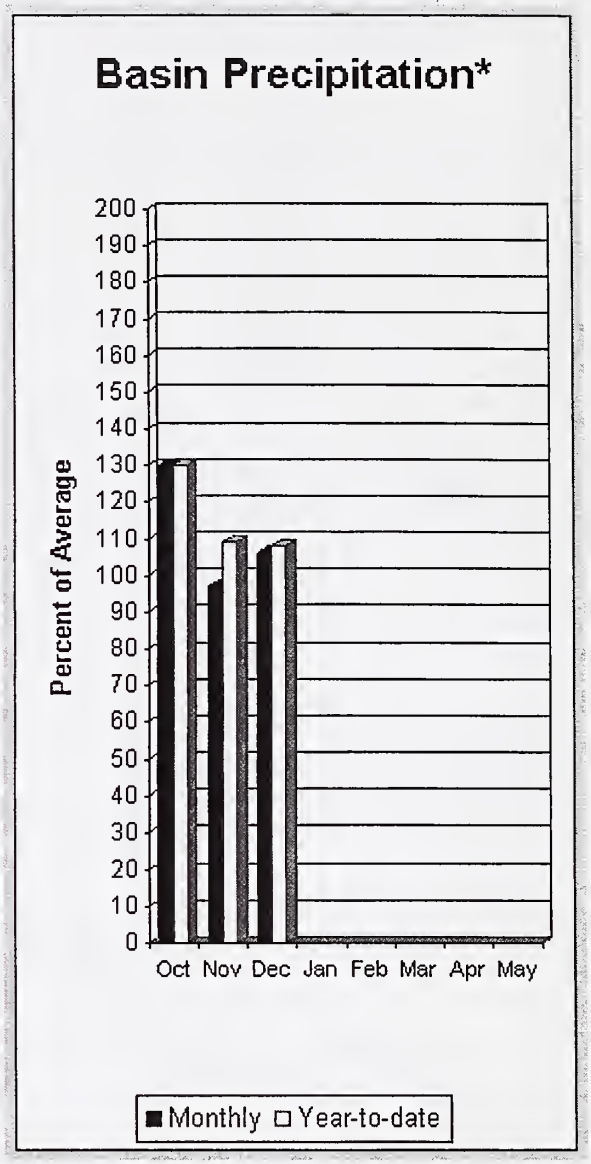
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Cowlitz-Lewis River Basins
Percent of Average
January 1, 2002

Snowpack - 133%
Precipitation - 114%

White - Green River Basins





*Based on selected stations

Summer runoff is forecast to be 101% of normal for the Green River below Howard Hanson Dam and 99% for the White River near Buckley. January 1 snowpack was 115% of average in both White River and Puyallup river basins and 110% in Green River Basin. Water content on January 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 19.4 inches. This site has a January 1 average of 15.8 inches. December precipitation was 106% of average, bringing the water year-to-date to 108% of average for the basins. Average temperatures in the area were 2 degrees above normal last month and 1 degree above for the water-year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WHITE near Buckley (1,2)	APR-JUL	306	394	434	99	474	562	440
	APR-SEP	381	481	527	99	573	673	535
GREEN below Howard Hanson (1,2)	APR-JUL	152	216	245	100	274	338	245
	APR-SEP	180	243	272	101	301	364	270

WHITE - GREEN - PUYALLUP RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

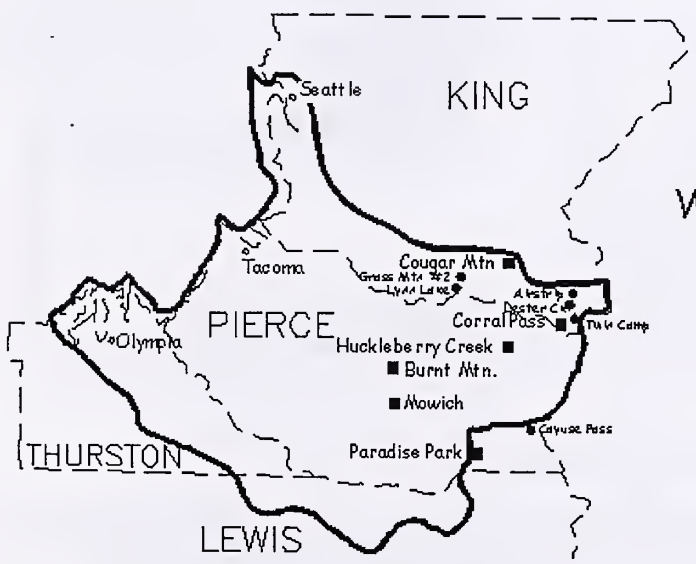
WHITE - GREEN - PUYALLUP RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WHITE RIVER	3	266	115
GREEN RIVER	6	209	110
PUYALLUP RIVER	3	269	115

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

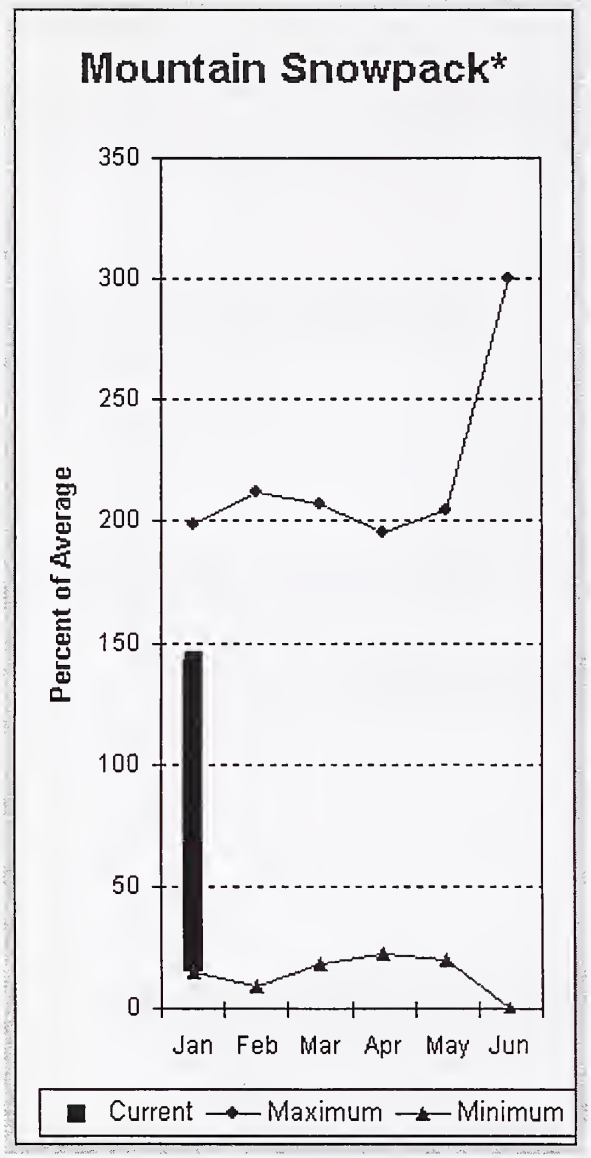
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

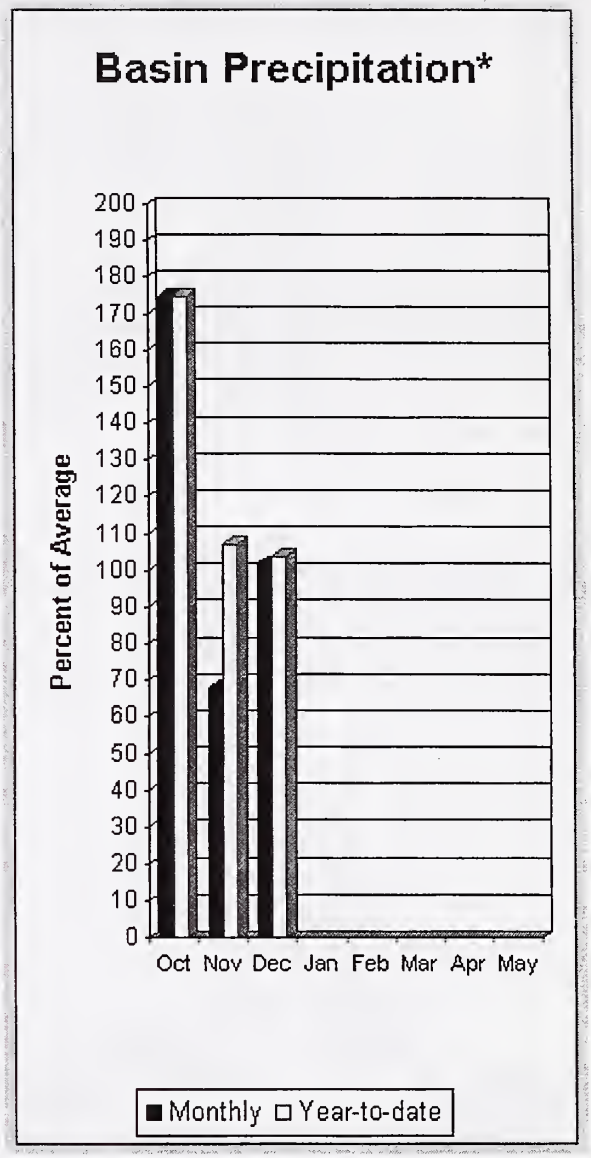


White-Green-Puyallup Basins
Percent of Average
January 1, 2002

Snowpack - 113%
Precipitation - 108%

Central Puget Sound River Basins





*Based on selected stations

Forecast for spring and summer flows are: 106% for Cedar River near Cedar Falls; 108% for Rex River; 104% for South Fork of the Tolt River; and 104% for Cedar River at Cedar Falls. Basin-wide precipitation for December was 102% of average, bringing water-year-to-date to 104% of average. January 1 average snow cover in Cedar River Basin was 136%, Tolt River Basin was 180%, Snoqualmie River Basin was 129%, and Skykomish River Basin was 126%. Olallie Meadows SNOTEL site at 3960 feet, had 22.4 inches of water content. Average January 1 water content is 22.2 inches at Olallie Meadows. December temperatures were 2-3 degrees above average for the past month but near normal for the water-year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CEDAR near Cedar Falls	APR-JUL	48	64	76	104	87	103	73
	APR-SEP	56	73	85	106	96	113	80
REX near Cedar Falls	APR-JUL	15.5	22	27	106	31	38	25
	APR-SEP	18.4	25	30	108	35	42	28
CEDAR RIVER at Cedar Falls	APR-JUL	33	60	78	105	96	123	74
	APR-SEP	28	57	76	104	95	124	73
SOUTH FORK TOLT near Index	APR-JUL	11.8	14.0	15.5	105	17.0	19.2	14.7
	APR-SEP	13.2	15.8	17.5	104	19.2	22	16.9

CENTRAL PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

CENTRAL PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CEDAR RIVER	4	158	136
TOLT RIVER	2	262	180
SNOQUALMIE RIVER	5	198	126
SKYKOMISH RIVER	3	189	126

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

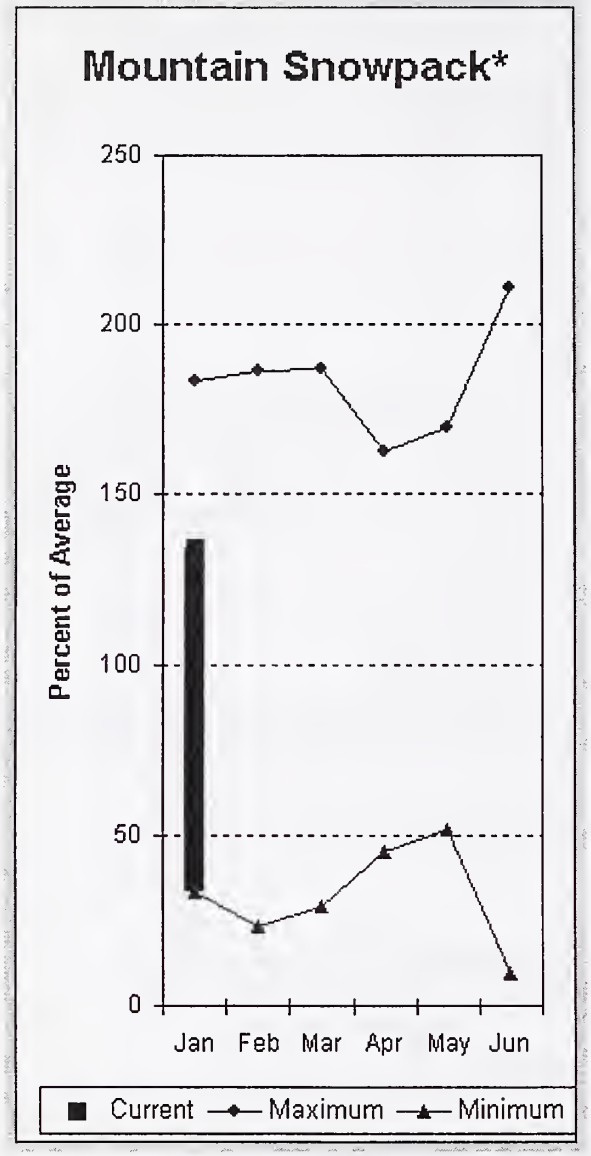
The average is computed for the 1971-2000 base period.

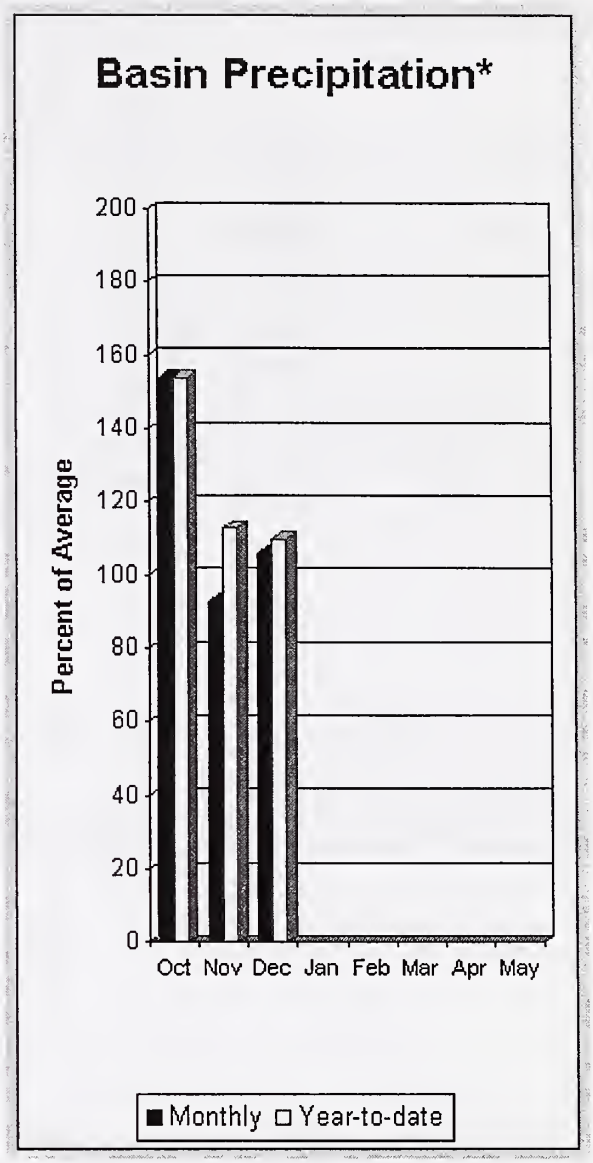
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Central Puget Sound Basins
Percent of Average
January 1, 2002

Snowpack - 143%
Precipitation - 104%

North Puget Sound River Basins





*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 96% of average for the spring and summer period. December streamflow in Skagit River was 91% of average. Other forecast points included Baker River at 109% and Thunder Creek at 100% of average. Basin-wide precipitation for December was 106% of average, bringing water-year-to-date to 110% of average. January 1 average snow cover in Skagit River Basin was 107%, Baker River Basin was 132% and Nooksack River Basin was 164%. Rainy Pass SNOTEL, at 4,780 feet, had 19.8 inches of water content. Average January 1 water content is 19.9 inches at Rainy Pass. January 1 Skagit River reservoir storage was 99% of average and 81% of capacity. Average December temperatures were 1-2 degrees above normal for the basin and remain near average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
THUNDER CREEK near Newhalem	APR-JUL	207	227	240	102	253	273	235
	APR-SEP	297	320	336	100	352	375	335
SKAGIT at Newhalem (2)	APR-JUL	1567	1699	1788	96	1877	2009	1860
	APR-SEP	1862	2021	2130	96	2239	2398	2220
BAKER RIVER near Concrete	APR-JUL	731	830	897	108	964	1063	830
	APR-SEP	962	1073	1149	109	1225	1336	1050

NORTH PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROSS	1404.1	1125.8	953.1	1142.1
DIABLO RESERVOIR	90.6	85.6	87.3	85.3
GORGE RESERVOIR	9.8	7.3	7.7	7.9

NORTH PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SKAGIT RIVER	9	224	107
BAKER RIVER	3	434	132
NOOKSACK RIVER	2	261	164

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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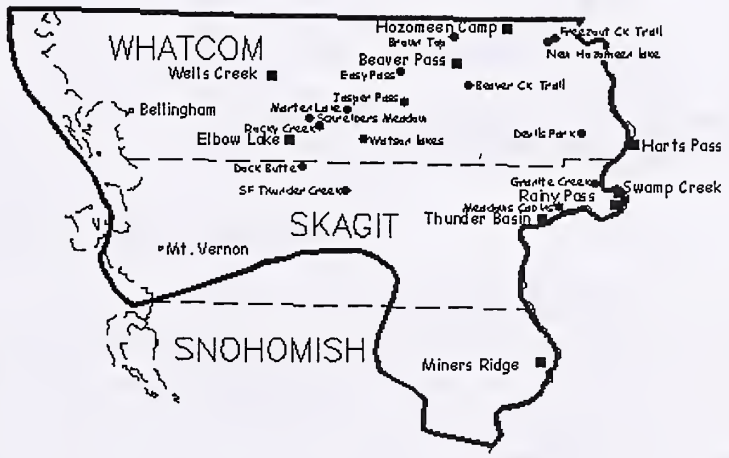
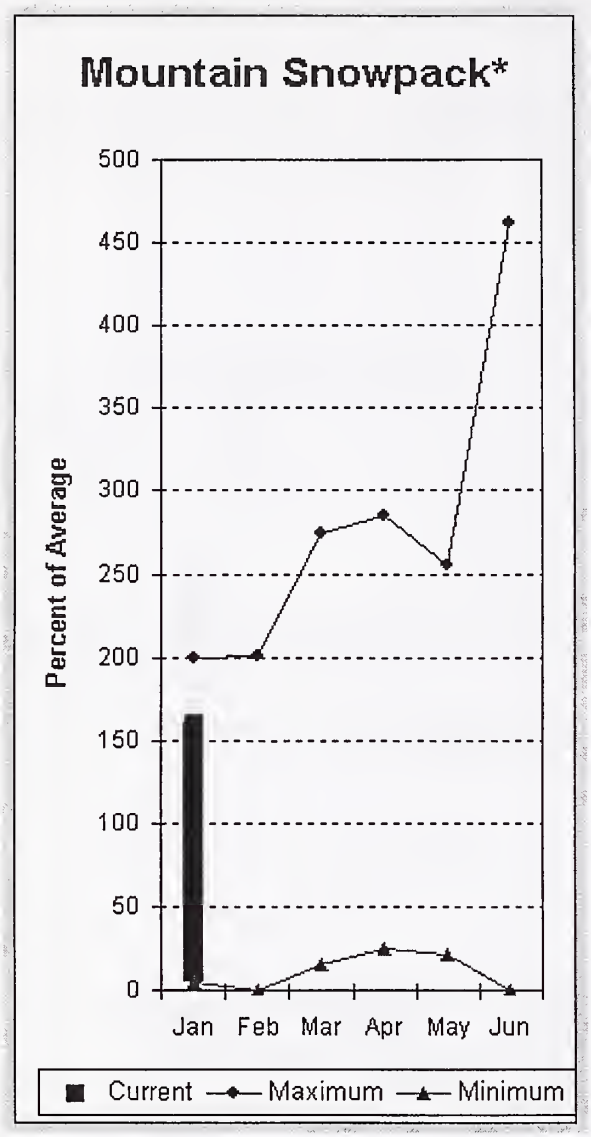
(2) - The value is natural flow - actual flow may be affected by upstream water management

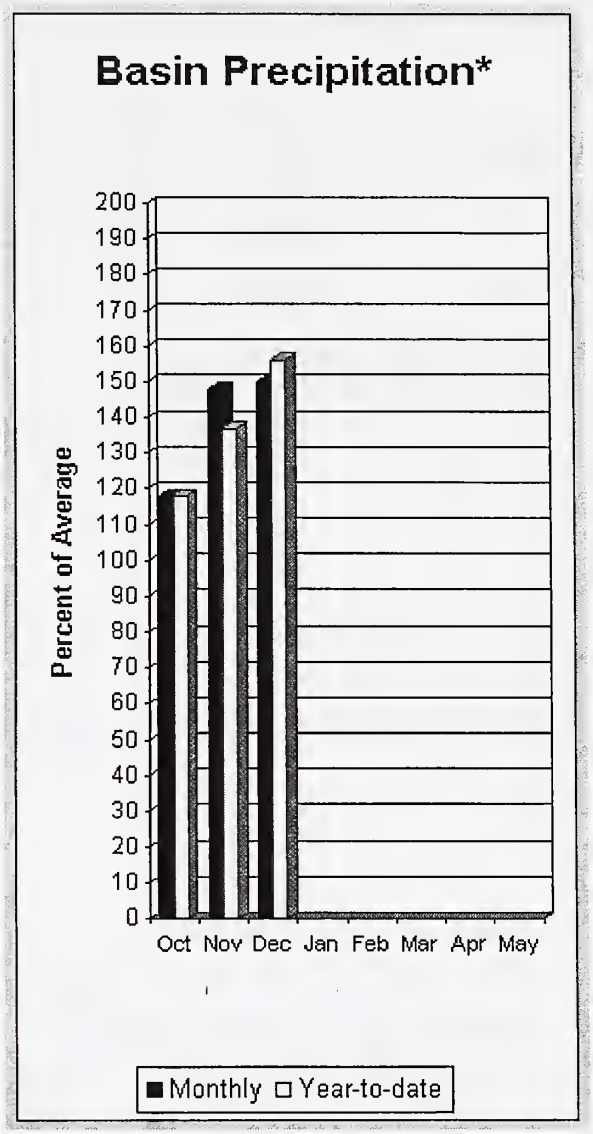
North Puget Sound Basins
Percent of Average
January 1, 2002

Snowpack - 134%
Precipitation - 110%
Reservoir Capacity - 99%



Olympic Peninsula River Basins





*Based on selected stations

Forecasted average runoff for streamflow in the Dungeness River and Elwha River basins is 107% and 104% respectively. Big Quilcene and Wynoochee rivers should expect below average runoff this summer also. December precipitation was 150% of average. Precipitation has accumulated at 156% of average for the water year. December precipitation at Sequim was 2.66 inches. The thirty-year average for December is 2.47 inches. Olympic Peninsula snowpack averaged 160% of normal on January 1. Temperatures were 1-2 above average for the month and near average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DUNGENESS near Sequim	APR-SEP	122	146	163	107	180	204	152
	APR-JUL	100	120	134	108	148	168	124
ELWHA near Port Angeles	APR-SEP	380	465	523	104	581	666	505
	APR-JUL	322	390	436	104	482	550	420

OLYMPIC PENINSULA RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

OLYMPIC PENINSULA RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OLYMPIC PENINSULA	2	184	160
ELWHA RIVER	0	0	0
MORSE CREEK	0	0	0
DUNGENESS RIVER	1	219	151
QUILCENE RIVER	1	173	164
WYNOOCHEE RIVER	0	0	0

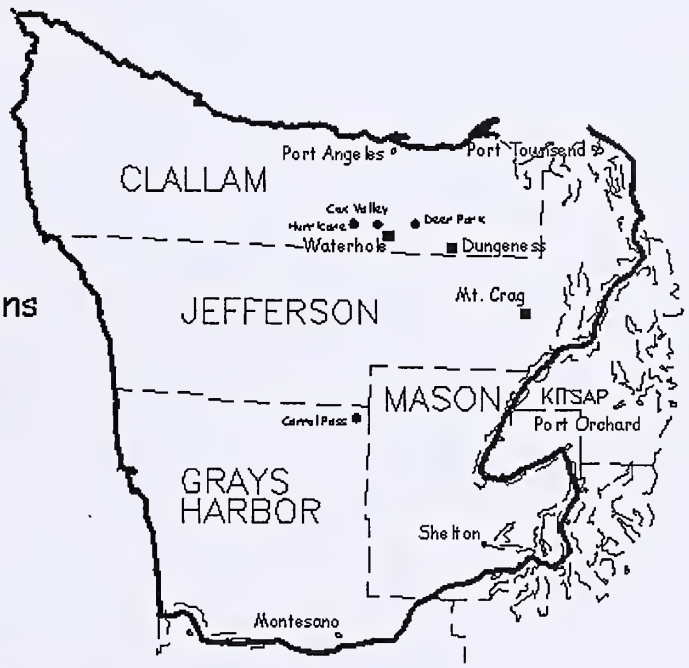
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Olympic Peninsula River Basins
Percent of Average
January 1, 2002

Snowpack - 160%
Precipitation - 156%



Issued by

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The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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Washington Basin Outlook Report

Natural Resources Conservation Service
Spokane, WA